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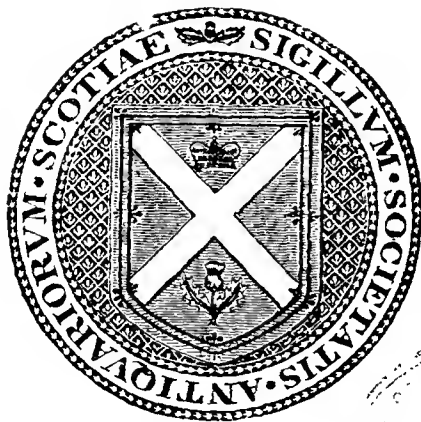
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OF THE
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SESSION
MDCCCCHL.-MDCCCCLV.

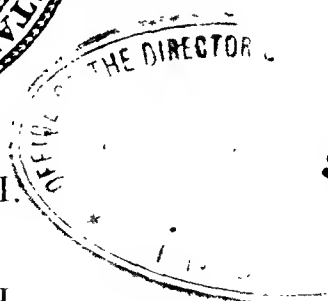


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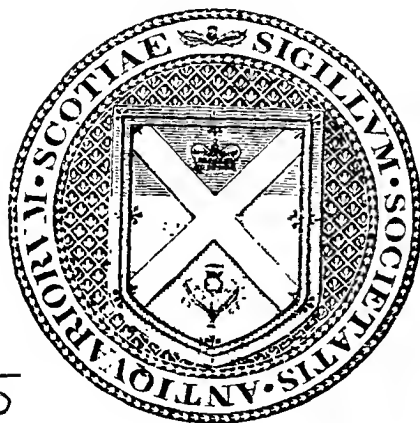
PROCEEDINGS

OF THE

Society of Antiquaries of Scotland

ONE HUNDRED AND TWENTY-FOURTH SESSION

1903-1904



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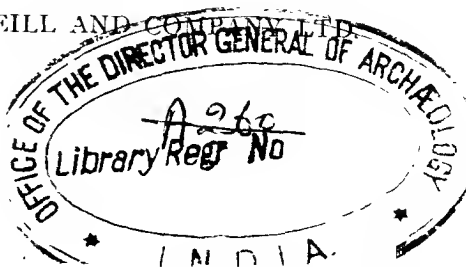
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(Instituted 1874, in terms of a Bequest for its endowment by the late
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SESSION 1903-1904.

RHIND LECTURER IN ARCHEOLOGY—GEORGE MACDONALD, M.A.

L A W S
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
INSTITUTED NOVEMBER 1780 AND
INCORPORATED BY ROYAL CHARTER 6TH MAY 1783.

(Revised and adopted November 30, 1901.)

1. The purpose of the Society shall be the promotion of ARCHÆOLOGY, especially as connected with the investigation of the ANTIQUITIES AND HISTORY OF SCOTLAND.

2. The Society shall consist of Fellows, Honorary Fellows, Corresponding Members, and Lady Associates.

3. Candidates for admission as Fellows must sign the Form of Application prescribed by the Council, and must be proposed by a Fellow and seconded by two Members of the Council. Admission shall be by ballot.

4. The Secretaries shall cause the names of the Candidates and of their Proposers to be inserted in the billet calling the Meeting at which they are to be balloted for. The Ballot may be taken for all the Candidates named in the billet at once ; but if three or more black balls appear, the Chairman of the Meeting shall cause the Candidates to be balloted for singly. Any Candidate receiving less than two-thirds of the votes given shall not be admitted.

5. Honorary Fellows shall consist of persons eminent in Archæology, who must be recommended by the Council, and balloted for in the same way as Fellows; and they shall not be liable for any fees of admission or annual subscriptions. The number of Honorary Fellows shall not exceed twenty-five.

6. Corresponding Members must be recommended by the Council and balloted for in the same way as Fellows, and they shall not be liable for any fees of admission or annual subscriptions.

7. Ladies who have done valuable work in the field of Archæology may be admitted as Lady Associates. The number of Lady Associates shall not exceed twenty-five. They shall be proposed by the Council, and balloted for in the same way as Fellows, and shall not be liable for any fees of admission or annual subscriptions.

8. Before the name of any person is added to the List of Fellows, such person shall pay to the funds of the Society Two Guineas as an entrance fee and One Guinea for the current year's subscription, or may compound for the entrance fee and all annual subscriptions by the payment of Twenty Guineas at the time of admission. Fellows may compound for future annual subscriptions by a single payment of Fifteen Guineas after having paid five annual subscriptions; or of Ten Guineas after having paid ten annual subscriptions.

9. The subscription of One Guinea shall become due on 30th November in each year for the year then commencing; and if any Fellow who has not compounded shall fail to pay the subscription for three successive years, due application having been made for payment, the Treasurer shall report the same to the Council, by whose authority the name of the defaulter may be erased from the List of Fellows.

10. Every Fellow not being in arrears of the annual subscription shall be entitled to receive the printed Proceedings of the Society from the date of election.

11. None but Fellows shall vote or hold any office in the Society.

12. Subject to the Laws and to the control of the Society in General Meetings, the affairs of the Society shall be managed by a Council elected and appointed as hereinafter set forth. Five Members of the Council shall be a quorum.

13. The Office-Bearers of the Society shall consist of a President, three Vice-Presidents, two Secretaries for general purposes, two Secretaries for Foreign Correspondence, a Treasurer, two Curators of the Museum, a Curator of Coins, and a Librarian. The President shall be elected for a period of five years, and the Vice-Presidents for a period of three years. One of the Vice-Presidents shall retire annually by rotation and shall not again be eligible for the same office until after the lapse of one year. All the other office-bearers shall be elected for one year and shall be eligible for re-election.

14. In accordance with the agreements subsisting between the Society and the Government, the Board of Manufactures shall be represented on the Council by two of its Members (being Fellows of the Society) elected annually by the Society. The Treasury shall be represented on the Council by the King's and Lord Treasurer's Remembrancer (being a Fellow of the Society).

15. The Council shall consist of the Office-Bearers, the three representative Members above specified, and nine Fellows, elected by the Society.

16. Three of the nine elected Members of Council shall retire annually by rotation, and shall not again be eligible till after the lapse of one year. Vacancies among the elected Members of Council and Office-Bearers occurring by completion of term of office, by retirement on rotation, by resignation, by death or otherwise, shall be filled by election at the Annual General Meeting. The election shall be by Ballot, upon a list issued by the Council for that purpose to the Fellows at least fourteen days before the Meeting.

17. The Council may appoint committees or individuals to take charge of particular departments of the Society's business.

18. The Annual General Meeting of the Society shall take place on St Andrew's Day, the 30th of November, or on the following day if the 30th be a Sunday.

19. The Council shall have power to call Extraordinary General Meetings when they see cause.

20. The Ordinary Meetings of the Society shall be held on the second Monday of each month, from December to May inclusive.

21. Every proposal for altering the Laws must be made through the Council: and the Secretaries, on instructions from the Council, shall cause intimation thereof to be made to all the Fellows at least one month before the General Meeting at which it is to be determined on.

Form of Special Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, my collection of _____, and I direct that the same shall be delivered to the said Society on the receipt of the Secretary or Treasurer thereof.

General Form of Bequest

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, the sum of £ _____ sterling [*to be used for the general purposes of the Society*] [or, *to be used for the special purpose, or object, of* _____], and I direct that the said sum may be paid to the said Society on the receipt of the Treasurer for the time being

LIST OF THE FELLOWS

OF THE

SOCIETY OF ANTIQUARIES OF SCOTLAND.

NOVEMBER 30, 1904.

PATRON.

HIS MAJESTY THE KING.

- | | |
|---|--|
| 1879. ABERCHOMBY, Hon. JOHN, 62 Palmerston Place,— <i>Secretary</i> . | 1886. ALEXANDER, W. LINDSAY, Pinkieburn, Musselburgh. |
| 1853. *ABERDEIN, FRANCIS, Garvocklea, Laurencekirk. | 1897. ALLAN, Rev. ARCHIBALD, Channelkirk Manse, Oxtou, Berwickshire. |
| 1896. ADAM, FRANK, Penang Smelting Works, Province Wellesley, Penang | 1900. ALLARDYCE, Col. JAMES, LL.D., of Culquorch, 3 Queen's Terrace, Aberdeen. |
| 1898. ADAM, STEPHEN, 199 Bath Street, Glasgow. | 1864. *ANDERSON, ARCHIBALD, 30 Oxford Square, London, W. |
| 1889. AGNEW, ALEXANDER, Procurator-Fiscal, Balwherrrie, Dundee. | 1884. ANDERSON, CHARLES M., Gardenhurst, Gedgeley Park, Prestwich, Manchester. |
| 1899. AGNEW, Sir ANDREW N., Bart., M.P., Lochmaw Castle, Stranraer. | 1889. ANDERSON, JAMES, Carronvale, Wardie Road. |
| 1884. AGNEW, Sir STAIR, K.C.B., M.A., 22 Buckingham Terrace. | 1897. ANDERSON, Capt. J. H., 2nd East Lancashire Regiment, c/o Messrs Cox & Co., 16 Charing Cross, London. |
| 1898. AIKMAN, HENRY ERSKINE, 5 Princes Square, Glasgow. | 1902. *ANDERSON, Major ROBERT D., Ingle-neuk, Paignton, Devon. |
| 1892. AILSA, The Most Hon. The Marquis of, Culzean Castle, Maybole. | 1871. ANDERSON, Sir ROBERT ROWAND, LL.D., H.R.S.A., Architect, 16 Rutland Square. |
| 1901. AITKEN, Mrs G. B., 38 Garscube Terrace. | |
| 1884. AITKEN, GEORGE SHAW, Architect, 49 Queen Street. | |
| 1892. AITKEN, JAMES H., Gartcows, Falkirk | |

An asterisk (*) denotes Life Members who have compounded for their Annual Contributions.

1897. BURN - MURDOCH, W. G., Arthur Lodge, 60 Dalkeith Road.
1887. BURNS, Rev. THOMAS, Croston Lodge, Chalmers Crescent.
1889. BURR, Rev. P. LORIMER, D.D., Manse of Lumdie and Fowls, Dundee.
1901. BUTE, The Most Hon. The Marquess of, Mount Stuart, Rothesay.
1901. BUTLER, C. M'ARTHUR, Secretary of the Society of Architects, St James's Hall, Piccadilly, London, W.
1898. CADENHEAD, JAMES, A.R.S.A., R.S.W., 15 Inverleith Terrace.
1880. CALDWELL, JAMES, Craigielea Place, Paisley.
1898. CALLANDER, JOHN GRAHAM, Benachie Distillery, by Inch, Aberdeenshire.
1887. CAMERON, J. A. M.D., Firhall, Nairn.
1890. CAMERON, RICHARD, 1 St David Street.
1902. CAMPBELL, The Right Hon Lord ARCHIBALD, J.P., D.L., Coombe Hill Farm, Kingston-on-Thames.
1899. CAMPBELL, ARCHIBALD, Leithburgh, 10 Maxwell Drive, Pollokshields, Glasgow.
1886. CAMPBELL, SIR DUNCAN ALEXANDER DUNDAS, Bart., of Barcaldine and Glenure, 16 Ridgeway Place, Wimbledon.
- 1865.*CAMPBELL, Rev. JAMES, D.D., The Manse, Balmerino, Fife-shire.
- 1874.*CAMPBELL, Right Hon. JAMES A., LL.D., M.P., of Stracathno, Brechin.
1901. CAMPBELL, Lieut.-Col. JOHN, 30 Waterloo Place.
1904. CAMPBELL, JOSEPH D., Solicitor, 142 West George Street, Glasgow.
- 1882.*CAMPBELL, PATRICK W., W.S., 25 Moray Place.
1883. CAMPBELL, WALTER J. DOUGLAS, of Innis Chonain, Loch Awe.
- 1877.*CAMPBELL-BANSEMAN, Right Hon. Sir HENRY, G.C.B., LL.D., M.P., 6 Grosvenor Place, London, and Belmont Castle, Meikle.
1901. CARPRAE, GEORGE, 77 George Street.
1891. CARMICHAEL, JAMES, of Arthursstone, Ardler, Meikle.
- 1888.*CARMICHAEL, Sir THOMAS D. GIBSON, Bart., Melleny, Balerno.
- 1901.*CARNEGIE, ANDREW, LL.D., of Skibo, Skibo Castle, Dornoch.
- 1871.*CARTWRIGHT, THOMAS LESLIE MELVILLE, Melville House, Ladybank, Fife.
1896. CAW, JAMES L., Curator of Scottish National Portrait Gallery, Queen Street.
1901. CAWDORE, The Right Hon. Earl, Stackpole Court, Pembroke.
1890. CHALMERS, P. MACGREGOR, Architect, 95 Bath Street, Glasgow.
1898. CHARLESON, MALCOLM MACKENZIE, Solicitor, Stromness.
1889. CHATWIN, J. A., Wellington House, Edgbaston, Birmingham.
1895. CHISHOLM, A. W., Goldsmith, 7 Claremont Crescent.
1903. CHISHOLM, EDWARD A., 43 Comely Bank Road.
1901. CHRISTIE, Miss ELLA R., 19 Buckingham Terrace, and Cowden, Dolla.
1898. CHRISTIE, Rev. J. G., B.D., Minister of Helensburgh.
1882. CHRISTISON, DAVID, M.D., 20 Magdala Crescent,—*Secretary*.
1902. CLARK, ARCHIBALD BROWN, M.A., University Lecturer on Economic History, 16 Comely Bank Street.
1889. CLARK, DAVID R., M.A., 8 Park Drive West, Glasgow.
1885. CLARK, GEORGE BENNET, W.S., 15 Douglas Crescent.
- 1871.*CLARK, Sir JOHN FORBES, Bart., LL.D., of Tillypromie, Aberdeenshire.
1896. CLARK, THOMAS BENNET, C.A., Newmillis House, Balerno.
1874. CLARK, WILLIAM BRUCE, M.A., M.B., 51 Harley Street, Cavendish Square, London.
1879. CLELAND, JOHN, M.D., LL.D., Professor of Anatomy, University of Glasgow.

1903. CLEPHAN, ROBERT COLTMAN, Maime House, Tynemouth.
1880. CLOUSTON, THOMAS S., M.D., Tipperlinn House, Morningside Place.
1891. COATS, SIR THOMAS GLEN, Bart., of Fergushe, Paisley.
- 1901.*COCHRAN-PATRICK, MRS ELLA A K., Woodside, Beith.
1898. COCHRAN-PATRICK, NEIL J. KENNEDY, of Woodside, Advocate, 34 Heriot Row.
1895. CORRIE, ADAM J., 5 Neville Park, Tunbridge Wells.
1901. CORSAR, DAVID, The Elms, Arb-roath.
1901. COURTNEY, CHARLES J., Librarian, Minet Public Library, Knatchbull Road, London, S.E.
1891. COUTTS, Rev. ALFRED, B.D., 8 John's Place, Leith.
- 1879.*COWAN, Rev. CHARLES J., B.D., Morebattle, Kelso.
1887. COWAN, JOHN, W.S., St Roque, Grange Loan.
1888. COWAN, WILLIAM, 47 Braid Avenue.
- 1893.*COX, ALFRED W., Glendoick, Glen-carne, Perthshire.
1899. COX, BENJAMIN C., Largo House, Largo, Fife.
- 1901.*COX, DOUGLAS H., 34 Drumshengh Gardens.
1882. CRABBIE, GEORGE, 8 Rothesay Terrace.
1892. CRAIG-BROWN, T., Woodburn, Selkirk.
1879. CRAIK, GEORGE LILLIE, 2 West Halkin Street, London, S.W.
1900. CRAX, JOHN, 11 Brunswick Street.
- 1880.*CRAX, JOHN, Kirkton, Inverness.
1903. CRAWFORD, DONALD, M.A., Advocate, Sheriff of Aberdeen, 35 Chester Street.
- 1861.*CRAWFURD, THOMAS MACKNIGHT, of Carsburn, Lauriston Castle.
1889. CROMBIE, Rev. JAMES M., The Manse, Cote des Neiges, Montreal, Canada.
1886. CROSS, ROBERT, 13 Moray Place.
1891. CULLEN, ALEXANDER, Architect, Brandon Chambers, Hamilton.
1904. CUNNINGHAM, D. J., D.C.L., LL.D., M.D., Professor of Anatomy, University of Edinburgh, 18 Grosvenor Crescent.
1903. CUNNINGHAM, HENRY J., Lecturer in Ancient History, University of Edinburgh, Whickham, Durham.
1891. CUNNINGHAM, JAMES HENRY, C.E., 2 Ravelston Place.
1893. CUNNINGTON, B. HOWARD, Devizes.
1893. CURLE, ALEXANDER O., W.S., 8 South Learmonth Gardens.
- 1889.*CURLE, JAMES, jun., Priorwood, Melrose,—*Librarian*.
- 1886.*CURRIE, JAMES, jun., Larkfield, Golden Acre.
1884. CURRIE, WALTER THOMSON, of Tryn-law, Cupar-Fife.
- 1879.*CURSITER, JAMES WALLS, Albert St., Kirkwall.
1879. DALGLEISH, J. J., Blank-ston Grange, Stirling.
1901. DALKEITH, The Right Hon. Earl of, M.P., Eildon Hall, St Boswells.
1893. DALRYMPLE, Sir CHARLES, Bart., M.P., Newhailes, Mid-Lothian.
1883. DALRYMPLE, Hon. HEW HAMILTON, Lochinch, Wigtownshire.
1880. DALRYMPLE, J. D. G., Menklewood, Stirling.
- 1872.*DAVIDSON, HUGH, Procurator-Fiscal, Braedale, Lanark.
- 1886.*DAVIDSON, JAMES, Solicitor, Kirriemuir.
1903. DEAS, A. ORR, LL.B., Advocate, 7 Forres Street.
1901. DEWAR, T. W., of Harperheid, Sandh-lands, Lanarkshire.
1901. DICK, Rev. JAMES, Blackwood, Auld-gurth, Dumfriesshire.
1898. DICK, Rev. ROBERT, Colinsburgh, Fife.

1893. DICKSON, Rev. JOHN, 159 City Road, Leith.
1895. DICKSON, WILLIAM K., Advocate, 8 Gloucester Place, *Foreign Secretary*.
1882. *DICKSON, WILLIAM FRASER, W.S., 11 Hill Street.
1886. *DIXON, JOHN HENRY, Dundee, Pitlochry.
1899. DOLFE, WILLIAM FRASER, 17 Craigmoad Road.
1887. DODDS, Rev. JAMES, D.D., The Mause, Constophane.
1899. DONALDSON, HENRY T., British Linen Bank, Nairn.
1897. *DONALDSON, JAMES, LL.D., Principal of the University of St. Andrews.
1891. DONALDSON, ROBERT M.A., Headmaster, Lochend Road, Public School, 34 Piddington Park, Portobello.
1861. *DOUGLAS, DAVID, 10 Castle Street.
1895. DOUGLAS, Sir GEORGE, Bart., Springfield Park, Kelso.
1902. DOUGLAS, R. SMYTHON, Art and Writing Master, Art Academy.
1885. DOUGLAS, Rev. SHERIDAN C., Douglas Supply Co. Ltd.
1881. *DOUGLAS, W. D. ROBINSON, Orchardton Castle, Douglas.
1893. DOWDEN, Right Rev. JOHN, D.D., LL.D., Bishop of the Episcopal Church in Edinburgh, 13 Leithmouth Terrace.
1874. DOWELL, ALEXANDER, 13 Palmerston Place.
1895. DOWNE, Lieut.-Col. KENNETH MACKENZIE, M.D., Portland Cottage, Galden Road, Colinton.
1900. DRUMMOND, JAMES W., Westlands, Strath.
1896. DRUMMOND, ROBERT J. Esq., 2 Lakeside Terrace, Perth.
1878. DRUMMOND, WILLIAM, 4 Leithmouth Terrace.
1897. *DRUMMOND MOLAY, Capt. W. H., of AUCHGUTHY, Esq.
1897. *DUFF, FRANK H. Esq., MRS. MARY STEWART, ECHINSON, GRANT, & CO. S.L., 31 Colinton Road, Edinburgh.
1891. DUFF, THOMAS GORDON, of Drummuir, Keith.
1902. DUFF DUNBAR, Mrs. L., of Ackergill, Ackergill Tower, Cathness.
1890. DUGUID-MCCOMBE, PETER, of Easter Skene, Aberdeenshire.
1872. *DUKE, Rev. WILLIAM, D.D., St. Vigeans, Aberdeen.
1878. DUNBAR, Sir ARCHIBALD HAMILTON, Bart., of Northfield, Duffus House, Elgin.
1887. DUNCAN, G. S., Dunmore Villa, Blangowan.
1877. *DUNDAS, RAUF, C.S., 16 St. Andrew Square.
1875. DUNN, Rev. JOHN, D.D., 5 Greenhill Place, *Catalogue of Museum*.
1901. DYER, EDMUND EUSTACE, M.B., C.M., Mar. Place House, Alloa.
1892. EDWARDS, JOHN, 4 Great Western Terrace, Glasgow.
1885. *ELDER, WILLIAM NICOL, M.D., 6 Tophenden Street.
1901. EGIN and KINCARDINE, The Right Hon., The Earl of K.G., Broomhall, Dundee.
1880. ELLIOT, JOHN, of Birks, Yarrowburgh Villa, Elmgrove, Southsea.
1889. ERSKINE, DAVID C. Esq., of Latholm, Latholm House, Broughty Ferry.
1895. EVANS, CHARLES R. J., Latholm Lodge, Loughborough Park, S.W.
1880. *FAULDS, A. WILSON, Knockbuckle House, Perth.
1901. FERGUSON, JAMES ARCHIBALD, Banker, FERMOS Villa, FERMOS Bank Road, Trinity.
1899. FERGUSON, Prof. JOHN, LL.D., University, Glasgow.
1899. FERGUSON, Rev. JOHN B.D., Mause of Avochdalgie, Perthshire.

1892. FERGUSON, JOHN, Writer, Duns
 1875. FERGUSSON, Sir JAMES R., Bart., of Spitalhaugh, West Linton.
 1899. *FINDLAY, JAMES LESLIE, Architect, 14 Coates Gardens
 1892. *FINDLAY, JOHN R., 27 Drumshough Gardens.
 1880. FINLAY, JOHN HOPE, W.S., 19 Glencairn Crescent
 1885. FLEMING, D. HAY, LL.D., 16 Greyfriars Garden, St Andrews
 1888. FLEMING, JAMES, jun., Kilmory, Skelmorlie, Ayrshire
 1895. FLEMING, JAMES SEARK, Duncatoun, Whittingehame Drive, Glasgow.
 1893. *FLEMING, Rev. JAMES, M.A., Minister of Kettins.
 1875. *FOOTE, ALEXANDER, 111 Warwick Road, Earl's Court, London
 1890. FORRESTER, HENRY, Woodfield, Colinton.
 1883. FOX, CHARLES HENRY, M.D., 35 Heriot Row.
 1862. *FRASER, ALEXANDER 17 Eddon Street.
 1902. FRASER, EDWARD D., 50 Moray Place.
 1898. FRASER, HUGH ERNEST, M.A., M.D., Medical Superintendent Royal Infirmary, Dundee.
 1886. FRASER, JAMES L., Castle Tolmie, Inverness.
 1896. FULLERTON, JOHN, 1 Gaythland Place, Paisley
 1890. GARDEN, FARQUHARSON T., 4 Rubislaw Terrace, Aberdeen
 1891. *GARSON, WILLIAM, W.S., 60 Palmerston Place.
 1891. *GARSTIN, JOHN RIBTON, D.L., M.A., Bagninstown, Castlebellingham, Co. Louth, Ireland
 1898. GAYTHORPE, HARPER, Prospect Road, Barrow-in-Furness
 1886. GEBBIE, Rev. FRANCIS, 29 Lynedoch Place
 1895. GIBB, ALEXANDER, 58 Ashley Terrace.
 1877. GIBB, JOHN S., 8 Coliden Crescent.
 1897. GIBSON, Rev. JOHN MACKENZIE, M.A., 22 Regent Terrace.
 1903. GIBSON, WILLIAM M.A., 9 Danule Street.
 1896. GILLES, PATRICK HENDER M.D., Ballachulain, Balvicar, Oban.
 1903. GILRUHL, JAMES DAVID, M.A., M.B., C.M., Hyde Park House, Aberdeen
 1901. GLADSTONE, Sir JOHN R., Bart., of Fasque, Laurencekirk
 1885. GLEN, ROBERT, 32 Dublin Street
 1896. GORDON, ARCHIBALD A., C.A., 1 Coates Gardens.
 1901. GORDON, The Hon. J. E., M.P., 61 Prince's Gate, London
 1884. GORDON, JAMES, W.S., 8 East Castle Road, Merchiston
 1889. GORDON, WILLIAM, of Tarvie 60 South Street, St Andrews.
 1883. GORDON-GHIMOUR, Lt.-Col. ROBERT, C.B., D.S.O. of Craigmillar, The Inch, Liberton
 1869. *GORDIE, GILBERT 31 Great King Street
 1898. GOURLIE, JAMES, Lieut. R.F.A., Airmongahol, Deccan India
 1892. GRAHAM, ROBERT C., Skipness, Argyll
 1888. GRANT, F. J., W.S., Lyon Office, H.M. General Register House
 1903. GRANT, JOHN MACPHERSON, jr. of Ballindalloch, Old Milton, Kinrossie.
 1902. GRANT, P. A. H., of Drumturk, Rhynie, Aberdeenshire
 1882. GRAY, GEORGE, Clerk of the Peace, County Buildings, Glasgow
 1904. GRAY, BAXTER, Springbank Broughty Ferry
 1904. GRAY, Rev. JOHN, St. Patrick's Rectory, 56 High Street
 1894. GRAY-BUCHANAN, A. W. Parkhill, Polmont
 1891. GREEN, CHARLES E. The Hollies, Gordon Terrace

1903. GREENWOOD, WILLIAM DE R., Barrister-at-Law, Croylands, Spring Grove, Isleworth, Middlesex.
1887. GREIG, ANDREW, C.E., 3 Duntrine Terrace, Broughty Ferry.
1886. *GREIG, T. WATSON, of Glencarse, Perthshire.
1899. GREWAR, DAVID S., Dalmasnaught, Glenisla, Aylth.
1880. GRIEVE, SYMINGTON, II Lander Road.
1889. *GRILLITH, HENRY, Clifton Spa, Bristol.
1871. *GRUB, Rev. GEORGE, Rector, Holy Trinity, Ayr.
1884. *GUTHRIE, CHARLES J., Advocate, K.C., Sheriff of Ross, Cromarty, and Sutherland, 13 Royal Circus.
1904. GUTHRIE, Sir JAMES, President of the Royal Scottish Academy, 41 Moray Place.
1899. GUTHRIE, JOHN, Solicitor, Town Clerk of Cran.
1874. GUTHRIE, Rev. ROGER R. LINGARD, Taybank House, Dundee.
1861. *HADDINGTON, The Right Hon. The Earl of, K.T., Tynninghame, Prestonkirk.
1904. HALDANE, R. C., of Lochend, Ollaberry, Lerwick, Shetland.
1891. HAMILTON, JAMES, Hatton, London Road, Kilmarnock.
1901. *HAMILTON OF DALZELL, The Right Hon. Lord, Dalzell, Motherwell.
1895. HAMPTON, Rev. DAVID MACHARDY, 3 Arlie Terrace, Dundee.
1903. HARRIS, WALTER B., Tangier, Morocco.
1887. HARRISON, JOHN, Rockville, Napier Road.
1856. HART, GEORGE, Procurator-Fiscal of Renfrewshire at Paisley.
1882. HAY, GEORGE, *Abernoth* Guide Office, Arbroath.
1874. HAY, J. T., Blackhall Castle, Banchoy.
1865. *HAY, ROBERT J. A., Florence.
1895. HEITON, ANDREW GRANGER, Architect, Perth.
1902. HENDERSON, ADAM, M.A., Langlea, Noblehill, Dumfries.
1888. *HENDERSON, Col. GEORGE, of Heverswood, Brasted Kent.
1889. *HENDERSON, JAMES STEWART, 1 Pond Street, Hampstead, London, N.W.
1886. HENRY, DAVID, Architect, Estherville, Hepburn Gardens, St Andrews.
1901. HERRIES, The Right Hon. Lord, Everingham Park, York.
1891. HERRIES, Capt. WILLIAM D., yr. of Spottes Hall, Dalbeattie.
1897. HEWAT, Rev. KIRKWOOD, M.A., U.F.C. Manse, Prestwick.
1887. HEWISON, Rev. J. KING, M.A., D.D., The Manse, Rothesay.
1896. HIGGIN, J. WALTER, Benvoulin, Oban.
1881. HILL, GEORGE W., 6 Princes Terrace, Dowanhill, Glasgow.
1877. *HOME-DRUMMOND, Col. H. S., of Blair Drummond, Stirling.
1874. *HOPE, HENRY W., of Liffness, Aberlady.
1874. *HORNIMAN, FREDERICK JOHN, Surrey Mount, Forest Hill, London.
1896. HORSBURGH, JAMES, 21 Campden Hill Gardens, Kensington, London.
1904. HORTON-SMITH, LIONEL GRAHAM, Barrister-at-Law, 53 Queen's Gardens, Lancaster Gate, London.
1901. HOULDSWORTH, Sir WILLIAM HENRY, Bart., M.P., Coodham, Kilmarnock.
1892. HOUSTON, Rev. A. McNEILL, M.A., B.D., The Manse, Auchterderran, Cardenden, Fife.
1899. HOWATT, HENRY R., Brantwood, Corroar Road, Newlands, Glasgow.
1889. *HOWDEN, CHARLES R. A., Advocate, 25 Melville Street.
1886. HOWDEN, JOHN M., C.A., 11 Eton Terrace.
1861. *HOWE, ALEXANDER, W.S., 17 Moray Place.
1900. HOZIER, Hon. JAMES, M.P., Mauldslie Castle, Carlisle.

- 1872 *HUNTER, COL. CHARLES. Plas Cöch, Llantair P.G., Anglesea.
1891. HUNTER, REV. JAMES, Fala Manse, Blackshiels.
1896. HUNTER, REV. JOHN. M.A., B.D., Minister of Rattray, Blargowrie
1886. HUNTER, REV. JOSEPH. M.A., Cockburnspath.
1898. HUNTER, THOMAS, W.S., Town Clerk of Edinburgh. Inverarbour, 54 Inverleith Place.
1852. HUTCHESON, ALEXANDER, Architect Herschel House, Broughty Ferry.
1895. HUTCHISON, JAMES T., of Moreland, 12 Douglas Crescent.
- 1871.*HUTCHISON, JOHN, R.S.A. 19 Manor Place.
1899. IMRIE, REV. DAVID, St Andrew's U.F. Church, Dunfermline.
1891. INGLIS, ALEXANDER WOOD, Secretary, Board of Manufactures, 39 Abercromby Place.
1904. INGLIS, FRANCIS CAIRD, Rock House, Calton Hill.
1887. INGLIS, REV. W. MASON, M.A., Auchterhouse.
1896. IRKLAND, WILLIAM W., M.D., 1 Victoria Terrace, Musselburgh.
1901. JACKSON, RICHARD C., of Bowyer Park, Camberwell, Surrey.
1885. JAMESON, ANDREW, M.A., K.C., Sheriff of Perthshire, 14 Moray Place.
- 1871.*JAMESON, JAMES AULDJO, W.S., 14 Buckingham Terrace.
1902. JOHNSTON, ALFRED WINTLE, Architect, 36 Margaretta Terrace, Chelsea, London.
1892. JOHNSTON, DAVID, 24 Huntly Gardens, Kelvinside, Glasgow.
1900. JOHNSTON, WILLIAM. M.D., C.B., Colonel (retired), Army Medical Staff, of Newton Dee, Murtle
1903. JOHNSTONE, REV. DAVID. Minister of Quarff, Shetland.
1892. JOHNSTONE, HENRY, M.A. Oxon. (Edinburgh Academy), 69 Northumberland Street.
1898. JONAS, ALFRED CHARLES. Fairfield, Parchmore Road, Thoruton Heath, Surrey.
1893. KAYE, WALTER JENKINSON, B.A., Pembroke College, Harrogate.
- 1870.*KELTIE, JOHN S., LL.D., Secretary, Royal Geographical Society, 15 Neville Court, Abbey Road, London, N.W.
- 1880.*KENNEDY, JOHN. M.A., 25 Abingdon Street, Westminster.
- 1889.*KERMODE, PHILIP M. C., Advocate, Cloughbane, Ramsey, Isle of Man.
1889. KERR, ANDREW W., Royal Bank House, St Andrew Square.
1896. KERR, HENRY F., A.R.I.B.A., 62 Hanover Street.
1878. KING, SIR JAMES. Bart., LL.D., 115 Wellington Road, Glasgow
1884. KINLOCH, SIR JOHN G. S., Bart., Kinloch House, Mergle.
1892. KINROSS, JOHN, Architect, A.R.S.A., Seven Gables, Mortonhall Road.
- 1900.*KINTORE, The Right Hon. The Earl of, G.C.M.G., LL.D., Keith Hall, Inverurie.
1896. KIRKPATRICK, JOHN G., W.S., 32 Mornug-side Park, Edinburgh
1903. LAIDLAW, WALTER, Abbey Cottage, Jedburgh.
1890. LAING, JAMES H. W., M.A. B.Sc., M.B., C.M., 9 Tay Square, Dundee.
1899. LAMB, JAMES, Leabrac, Inverary Terrace, Dundee.
1901. LAMINGTON, The Right Hon. Lord. K.C.M.G., Lamington House, Lamington.

1901. *LAMONT, NORMAN, M. of Knockdow,
Toward, Argyleshire.
- 1900 LANG, ANDREW, M.A., LL.D., 1
Marloes Road, Kensington, Lon-
don.
1892. *LANG, JAMES, 9 Crown Gardens,
Dowanhill, Glasgow.
1893. LANGWILL, ROBERT B., 7 St Leonard's
Bank, Perth.
- 1882 *LEADBETTER, THOMAS GREENSHIELDS,
Architect, 17 Young Street.
- 1901 LEITCH, COLIN, Ardishaig.
- 1884 *LENNON, JAMES, Eden Bank, Dum-
fries.
1857. *LESCIE, CHARLES STEPHEN, of Bal-
quhain, 11 Chanoury, Aberdeen.
- 1901 *LEVEN and MELVILLE, The Right
Hon. The Earl of, Glenferness,
Dumfriesshire.
- 1902 *LEVEYSON-GOWER, F. S., M.P.,
Berkeley House, Berkeley Square,
London.
- 1890 LINDSAY, LEONARD C., 23 Belgrave
Road, London.
1873. *LINDSAY, Rev. THOMAS M., D.D., Pro-
fessor of Divinity, U.F. Church Col-
lege, Glasgow.
1892. LINTON, SIMON, Oakwood, Selkirk.
1881. *LITTLE, ROBERT, Ardenlea, North-
wood, Middlesex.
1898. LIVINGSTONE, DUNCAN PAUL, New-
bank, Giffnock.
- 1901 LIVINGSTONE, MATTHEW, 32 Herma-
tage Gardens.
- 1901 LONEY, J. W. M., 6 Carlton
Street.
1882. LORIMER, GEORGE, Dunsdeer, Gils-
land Road.
- 1899 LOW, Rev. GEORGE DUNCAN, M.A., 61
Morningside Drive.
1902. LOW, GEORGE M., Actuary, 11 Moray
Place.
1903. LOWE, D. F., M.A., LL.D., Head-
master, George Heriot's School,
Leamington Place.
1873. *LUMSDEN, Lt.-Col. HENRY WILLIAM,
Langley Park, Montrose.
1873. *LUMSDEN, HUGH GORDON, of Clova,
Lumsden, Aberdeenshire.
1880. *LUMSDEN, JAMES, Arden House, Arden,
Dumbarshire.
1893. LYNN, FRANCIS, Livingstone Terrace,
Glasgow.
1892. MACADAM, JOSEPH H., 38 Shoe Lane,
London.
1885. M'BAIN, JAMES M., Banker, Ayr-
broath.
1893. MACBRAYNE, DAVID, Auchintiel,
Helensburgh.
1904. MACBRIDE, MACKENZIE, Lyndhurst,
Chesham Road, South Croydon.
1904. MACDONALD, CHARLES, Dunglass
Castle, Bowling.
1885. MACDONALD, COLL. REGINALD, M.D.,
Ardantree, Ayr.
1900. MACDONALD, GEORGE, M.A., 41 Lily-
bank Gardens, Glasgow;—*Curator of
Coins*.
1899. MACDONALD, JAMES, 3 Dundas
Street.
1879. MACDONALD, JAMES, W.S., 21 Thistle
Street.
1890. *MACDONALD, JOHN MATHESON, 95
Harley Street, London, W.
1882. MACDONALD, KENNETH, Town Clerk of
Inverness.
1890. MACDONALD, WILLIAM RAE, Neidpath,
Wester Coates Avenue.
1896. MACDOUGALL, J. PATTEN, Advocate,
39 Heriot Row, and Gullanach,
Oban.
1872. *M'DOWALL, THOMAS W., M.D., East
Cottingwood, Morpeth.
1860. MACEWEN, JOHN COCHRANE, Trafford
Bank, Inverness.
1892. M'EWEN, Rev. JOHN, Dyke,
Forres.
1903. M'EWEN, W. C., M.A., W.S., 9
Douglas Crescent.
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Cheshire.

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1892. MACKAY, THOMAS A., 22 Clarence Street.
1882. MACKAY, WILLIAM, Solicitor, Inverness.
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1891. *MACKENZIE, JAMES, 2 Rillbank Crescent.
1872. *MACKENZIE, Rev. JAMES B., Kenmore, Aberfeldy.
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1876. M'KIE, THOMAS, Advocate, 30 Moray Place.
1901. M'KILLOP, JAMES, jun., Polmont Park, Polmont.
1888. *MACKINLAY, J. M., M.A., The Lee, 18 Colinton Road, Merchiston.
1893. MACKINTOSH, WILLIAM FYFE, Solicitor, Maulesbank House, Arbroath.
1865. *MACKISON, WILLIAM, Architect, 8 Constitution Terrace, Dundee.
1878. MACLAGAN, ROBERT CRAIG, M.D., 5 Coates Crescent.
1903. M'LAUCHLAN, JAMES J., F.F.A., 19 Coates Gardens.
1896. MACLEAN, J. A., Union Bank House, Fortar.
1903. M'LEAN, Rev. JOHN, Minister of Grantully, Pittlie, Aberfeldy.
1885. *MACLEHOSK, JAMES J., M.A., 61 St Vincent Street, Glasgow.
1893. MACLEOD, JOHN N., of Kintarbert, Glensadell, Argyllshire.
1890. *MACLEOD, REGINALD, C.B., Under-Secretary for Scotland, 50 Draycott Place, London, S.W.
1889. MACLUCKIE, JOHN REDDOCH, Braeside, Falkirk.
1875. MACMATH, WILLIAM, 16 St Andrew Square.
1882. MACMILL, Rev. J. C., D.D., Harlaw Hill House, Prestonpans.
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1895. MACPHERSON, Capt. JAMES F., United Service Club, Shandwick Place.
1878. MACPHERSON, NORMAN, LL.D., 6 Buckingham Terrace.
1882. *MACRITCHIE, DAVID, C.A., 4 Archibald Place.
1896. MALLOCH, JAMES, M.A., Dudhope Villa, Dundee.
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1901. MANN, LUDOVIC M'LELLAN, Hillside, Bridge of Weir.
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1885. MARSHALL, WILLIAM HUNTER, of Callander, Perthshire.
1891. MARTIN, FRANCIS, 207 Bath Street, Glasgow.

- 1902 MARTIN, F. J., W.S., 17 Rothesay Place.
- 1861 MARWICK, Sir JAMES DAVID, LL.D., 19 Woodside Terrace, Glasgow.
1886. MASSON, DAVID, LL.D., Historiographer for Scotland, 2 Lockharton Gardens.
1892. MATHESON, AUGUSTUS A., M.D., 41 George Square.
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1898. MILLER, Rev. EDWARD, M.A., The Manse, Bishopston, Renfrewshire.
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1904. MILLER, JOHN CHARLES, Agent, Commercial Bank, 135 West George Street, Glasgow.
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1903. MITCHELL, JAMES, 222 Darnley Street, Pollokshields, Glasgow.
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1890. *MITCHELL, SYDNEY, Architect, 34 Drummond Place.
1882. *MITCHELL-THOMSON, Sir MITCHELL, Bart., 6 Charlotte Square.
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1882. MORRISON, HEW, LL.D., Librarian, Edinburgh Public Library.
1887. *MOUBRAY, JOHN J., Naemoor, Rumbling Bridge.
1901. MOULD, RICHARD W., Librarian, Southwark Public Library, Walworth Road, Southwark, S.E.
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1887. MURRAY, SIR JOHN, K.C.B., LL.D.,
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1884. MURRAY, PATRICK, W.S., 7 Eton
Terrace.
1896. NAPIER, THEODORE, 7 West Castle
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- 1891.*NEILSON, GEORGE, LL.D., Pitlochie,
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Glasgow.
1887. NEWTON, R. N. H., 3 Eglinton Cres-
cent.
1889. NICHOLSON, J. SHIELD, M.A., D.Sc.,
Professor of Political Economy, &c.,
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1895. NISBETT, HAMILTON MORE, The Drum,
Greenend, Mid-Lothian.
- 1877.*NIVEN, ALEXANDER T., C.A., 28 Foun-
tainhall Road.
1895. NIXON, WILLIAM, Solicitor, 10 White-
hall Street, Dundee.
1891. NOBLE, ROBERT, Heronhill, Hawick.
1898. NOTMAN, JOHN, F.F.A., 176 Newhaven
Road.—*Treasurer.*
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Biel, Prestonkirk.
- 1899.*ORB, ROBERT, of Kinnard, 79 West Nile
Street, Glasgow.
1896. ORMOND, Rev. DAVID D., Minister of
Craig's U.F. Church, Stirling.
1901. OWER, CHARLES, Architect, Benora,
Broughty Ferry.
1904. PANTER, Rev. CHARLES RICHARD,
M.A., LL.D., Wickhampton Rectory,
Acle, Norfolk.
1903. PARK, ALEXANDER, Inglewde, Lenzie.
1896. PARK, JOHN A., Eastwood, Dunkeld.
1898. PATON, ROBERT City Chamberlain,
19 Regent Terrace.
1891. PATON, VICTOR ALBERT NOEL, W.S.,
65 Frederick Street.
1880. PATTERSON, JAMES K., Ph.D., LL.D.,
President of the State College of
Kentucky, Lexington, U.S.A.
- 1871.*PAUL, GEORGE M., W.S., 16 St
Andrew Square.
1879. PAUL, SIR J. BALFOUR, Advocate,
Lyon King-of-Arms, 30 Heriot
Row.
1882. PAUL, Rev. ROBERT, U.F.C. Maunse,
Dollar.
- 1902.*PAULIN, DAVID, F.F.A., 6 Forbes
Street.
- 1874.*PAXTON, WILLIAM, 62 Fountainhall
Road.
1891. PEACE, THOMAS SMITH, Architect,
King Street, Kirkwall.
1879. PEDDIE, J. M. DICK, Architect, 8 Albany
Place.
1900. PHILLIPS, W. RICHARD, Architect,
Westbourne Lodge, Goldhawk Road,
Ravenscourt Park, London.
1892. PILLANS, HUGH HANDYSIDE, Royal
Bank, Hunter Square.
- 1885.*PIRRIE, ROBERT, 9 Buckingham Ter-
race, Hillhead, Glasgow.
- 1901.*PORTLAND, His Grace The Duke of
K.G., Welbeck Abbey, Notts.
1881. PRICHARD, Rev. HUGH, M.A., Dnam,
Gaerwen, Anglesea.
1900. PRIMROSE, Rev. JAMES, M.A., 27
Onslow Drive, Glasgow.
- 1865.*RAINY, Rev. ROBERT, D.D., Principal
and Professor of Theology and Church
History, U.F.C. College, Edinburgh,
8 Rosebery Crescent.
- 1873.*RAMPINI, CHARLES, LL.D., Burn-
side, Torquay Road, Paignton, S.
Devon.
1891. RAMSAY, WILLIAM, of Bowland,
Stow.

1903. RANKIN, HUGH F. Principal of the Anglo-Chinese College, Amoy, China.
1879. RANKINE, JOHN K.C., M.A., LL.D., Professor of Scots Law, University of Edinburgh, 23 Anshe Place.
1899. REA, ALEXANDER M.R.A.S., Superintendent of the Archaeological Survey of South India, Bangalore.
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1888. REID, Sir GEORGE, R.S.A., LL.D., 22 Royal Terrace.
1898. REID, JAMES ROBERT, 11 Magdala Crescent.
1897. REID, Rev. EDWARD T. S., M.A., The Rectory, Hawick.
1891. RHIND, W. BIRNIE, A.R.S.A., Sculptor, St Helen's, Canabridge Street.
1880. RICHARDSON, ADAM B., 32 Palace Mansions, Addison Bridge, London W.
1896. RICHARDSON, RALPH, W.S., 10 Magdala Place.
1886. RITCHIE, CHARLES, S.S.C., 29 Hill Street.
1902. RICHIE, G. DEANS, Chapelgill, Broughton Peeblesshire.
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1898. ROBERTS, ALEXANDER F., Thornheld, Selkirk.
1901. *ROBERTS, THOMAS J. S., of Drygrange, Melrose.
1879. ROBERTSON, GEORGE, Keeper of the Abbey, Dundee.
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1886. *ROBERTSON, ROBERT, Huntly House, Dollar.
1889. ROBERTSON, THOMAS S., Architect, Balmyle, Broughtly Ferry.
1879. *ROBERTSON, W. W., Architect, Wardie Bank, Boswell Road.
1895. *ROBINSON, JOHN RYLEY, LL.D., The Cedars, Moorlands Road, Dewsbury.
1880. *ROBSON, WILLIAM, S.S.C., Marchholm Gill-land Road.
1871. *ROLLO, The Right Hon. Lord, Duncrub House, Dunning.
1872. ROSEBERY, The Right Hon. The Earl of, K.G., K.T., LL.D., Dalmeny Park.
1876. ROSS, ALEXANDER, LL.D., Architect Queensgate Chambers, Inverness.
1881. ROSS, JOSEPH CARNE M.D., 19 Palatine Road, Withington, Manchester.
1891. ROSS, THOMAS, Architect, 14 Saxe-Coburg Place.
1894. SANDEMAN, Lt.-Colonel G. G., of Founab, Monfian, Perthshire.
1903. SAYCE, A. H., M.A., LL.D., D.D., Professor of Assyriology, Oxford & Chalmers Crescent, Edinburgh.
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1892. SCOTT, JAMES, J.P., Rock Knowe, Tayport.
1903. SCOTT, JOHN, W.S., 13 Hill Street.
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1889. SCOTT-MONCRIEFF, W. G., Sheriff-Substitute, Edgemoor, Lanark.
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1897. SHIELDS, ROBERT, Banker, Neenah, Wisconsin, U.S.A.
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- 1880.*SIMPSON, ROBERT R., W.S., 23 Douglas Crescent.
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- 1892.*SMYTHE, Colonel DAVID M., Methven Castle, Perth.
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- 1882.*SOUTHEK, The Right Hon. The Earl of, K.T., LL.D., Kinnaird Castle, Brechin.—*Vice-President*.
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1902. STEUART, JAMES, W.S., 10 Rothesay Terrace.
1895. STEVENSON, JOHN HORNE, M.A., Advocate, 9 Oxford Terrace.
- 1867.*STEVENSON, JOHN J., Architect, 4 Porchester Gardens, London, W.
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- 1871.*STEWART, Maj.-Gen. J. H. M. SHAW R.E., 7 Inverness Terrace, London, W.
1885. STEWART, ROBERT KING, Murdostoun Castle, Newmans, Lanarkshire.
1894. STEWART, WALTER, 3 Queensferry Gardens.
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1897. STRACHAN, Rev. JAMES M., B.D., Kilspindie Manse, Errol.
- 1903.*STRATHCONA AND MOUNT ROYAL, The Right Hon. Lord, G.C.M.G., Invercoe, Argyleshire.
1889. STRATHERN, ROBERT, W.S., 13 Eglinton Crescent.
1894. STUART, ALEX., 11 Coates Gardens.
1904. STUART, Rev. JOHN, B.D., Kirkton, Hawick.

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- 1888.*REID, SIR GEORGE, R.S.A., LL.D., 22 Royal Terrace.
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1902. RITCHIE, G. DEANS, Chapelgill, Broughton Peebles-shire.
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- 1901.*ROBERTS, THOMAS J. S., of Drygrange, Melrose.
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- 1879.*ROBERTSON, W. W., Architect, Wardie Bank, Boswell Road.
- 1865.*ROBINSON, JOHN RILEY, LL.D., The Cedars, Moorlands Road, Dewsbury.
- 1880.*ROBSON, WILLIAM, S.S.C., Marchholm, Gillsland Road.
- 1871.*ROLLO, The Right Hon. Lord, Duncrub House, Dunning.
- 1872.*ROSEBERRY, The Right Hon. The Earl of, K.G., K.T., LL.D., Dalmeny Park.
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1891. ROSS, THOMAS, Architect 14 Saxe-Coburg Place.
- 1894.*SANDEMAN, Lt. Colonel G. G., of Fonab, Mounth, Perthshire.
- 1903.*SAYCE, A. H., M.A., LL.D., D.D., Professor of Assyriology, Oxford, 8 Chalmers Crescent, Edinburgh.
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1903. SCOTT, JOHN, W.S., 13 Hill Street.
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1889. SCOTT-MONCRIEFF, W. G., Sheriff-Substitute, Edgemoor, Lanark.
1881. SEMPLE, ANDREW, M.D., United Service Club, Slandwick Place.
- 1848.*SETON, GEORGE, M.A., Advocate, Avon House, Abernethy Perthshire.
1892. SHIELDS, HENRY K., C.A., 141 George Street.
1897. SHIELDS, ROBERT, Banker, Neenah, Wisconsin, U.S.A.
1879. SIBBALD, SIR JOHN, M.D., 18 Great King Street.
- 1871.*SIMPSON, ALEX. R., M.D., Professor of Midwifery, University of Edinburgh, 52 Queen Street.

1890. SIMPSON, H. F. MORLAND, M.A., Rector of the Grammar School, 80 Hamilton Place, Aberdeen.
1880. *SIMPSON, ROBERT R., W.S., 23 Douglas Crescent.
1896. SINCLAIR, JOHN, 28 Moutrose Terrace.
1879. SMAIL, JAMES, 7 Bruntfield Crescent.
1904. SMEATON, OLIPHANT, 37 Mansion-house Road.
1898. SMELLIE, THOMAS, Architect, Grange Place, Kilmarnock.
1902. SMITH, A. DUNCAN, Advocate, 27 India Street.
1898. SMITH, DAVID CRAWFORD, 19 Queen Street, Perth.
1892. SMITH, G. GREGORY, 16 Murrayfield Avenue.
1893. SMITH, GEORGE, S.S.C., 21 St Andrew Square.
1902. SMITH, H. L. NORTON, Donaghmore House, Ballybroghy, Queen's Co., Ireland.
1898. SMITH, Rev. JAMES, M.A., B.D., Minister of St George's-in-the-West, 3 Skene Place, Aberdeen.
1874. *SMITH, J. IRVINE, 20 Great King Street.
1901. SMITH, Mrs. LUCY M., 6 Darnaway Street.
1889. SMITH, ROBERT, Solicitor, 9 Ward Road, Dundee.
1902. SMITH, WILLIAM B., 34 Buchanan Street, Glasgow.
1902. SMITH, W. C., M.A., LL.B., Advocate, 6 Darnaway Street.
1891. *SMITH, W. M'COMBIE, Persie, Blairgowrie.
1892. *SMYTHE, Colonel DAVID M., Methven Castle, Perth.
1892. SOMERVILLE, Rev. J. E., B.D., Villa Jeanne, Mentone, France.
1882. *SOUTHESK, The Right Hon. The Earl of, K.T., LL.D., Kinnaird Castle, Brechin.—*Vice-President*.
1890. *SPENCE, CHARLES JAMES, South Preston Lodge, North Shields.
1882. SPRAGUE, THOMAS B., M.A., LL.D., 29 Buckingham Terrace.
1903. STARK, Rev. WILLIAM A., Minister of Kirkpatrick-Durham, Dalbeattie.
1875. STARKE, JAMES G. H., M.A., Advocate Troqueer Holm, Dumfries.
1891. STEELE, WILLIAM, Inland Revenue Office, Kelso.
1904. STEEL, Rev. JAMES, D.D., Vicar of Howorth, Newcastle-on-Tyne.
1901. STEUART, A. FRANCIS, Advocate, 79 Great King Street.
1902. STEUART, JAMES, W.S., 10 Rothe-ay Terrace.
1895. STEVENSON, JOHN HORNE, M.A., Advocate, 9 Oxford Terrace.
1867. *STEVENSON, JOHN J., Architect, 4 Porchester Gardens, London, W.
1904. STEVENSON, Major-General T. R., C.B., of Sunnyside, Lanark.
1887. STEVENSON, Rev. W., M.A., The Manse, Achtertool, Kirkealdy.
1879. STEWART, CHARLES POYNITZ, Chastfield Park, Stevenage.
1901. STEWART, Sir MARK J. M'TAGGART, Bart., M.P., Ardwell, Stranraer.
1901. STEWART, Sir HUGH SHAW, Bart., M.P., Ardgowan, Greenock.
1871. *STEWART, Maj.-Gen. J. H. M. SHAW, R.E., 7 Inverness Terrace, London, W.
1885. STEWART, ROBERT KING, Muirdostoun Castle, Newnham, Lanarkshire.
1894. STEWART, WALTER, 3 Queensferry Gardens.
1903. STIRLING-COOKSON, C. L., of Renton House, Berwickshire.
1882. STORY, Rev. R. HERBERT, D.D., LL.D., Principal of the University, Glasgow.
1897. STRACHAN, Rev. JAMES M., B.D., Kilspindie Manse, Errol.
1903. *STRATHCONA AND MOUNT ROYAL, The Right Hon. Lord, G.C.M.G., Invercoe, Argyleshire.
1889. STRATHERN, ROBERT, W.S., 13 Eglinton Crescent.
1894. STUART, ALEX., 11 Coates Gardens.
1904. STUART, Rev. JOHN, B.D., Kirkton, Hawick.

1895. STUART-GRAY, The Hon. MORTON GRAY, Gray House, Dundee.
1897. SULLEY, PHILIP, Bellbrae, Cupar-Fife.
1901. SUTHERLAND, His Grace The Duke of K.G., Dunsinon Castle, Golspie.
1899. *SUTHERLAND, ROBERT M., Solsgrith, Dollar.
1887. SUTHERLAND, J. B., S.S.C., 10 Royal Terrace.
1897. SUTTIF, GEORGE C., of Lalathan, Lalathan Lodge, St Cyrus, by Montrose.
1884. SWALLOW, Rev. H. J., M.A., Hawthorne Rectory, Sunderland.
1900. SWINTON, Capt. GEORGE S. C., 36 Pont Street, London.
1899. SYLVESTER, Rev. WALTER, Montfort, Clacton-on-Sea.
1903. TAIT, JOHN HUNTER, Advocate, 43 Moray Place.
1904. TAYLOR, JAMES B., Sherfield Manor, Basingstoke, Herts.
1892. *TAYLOR, J. PRINGLE, W.S., 19 Young Street.
1900. TAYLOR, W. LAWRENCE, Broad Street, Peterhead.
1901. TAYLOR, Rev. WILLIAM, M.A., Minister of Melville Parish, Montrose.
1884. TEMPLE, Rev. WILLIAM, M.A., D.D., 7 Albert Terrace, Aberdeen.
1870. *TENNANT, Sir CHARLES, Bart., The Glen, Innerleithen.
1896. THIN, JAMES, 22 Lauder Road.
1902. THIN, ROBERT, M.A., M.B., C.M., 38 Albany Street.
1900. THOMSON, ANDREW, Glenhinning Terrace, Galashiels.
1894. THOMSON, EDWARD DOUGLAS, Chief Clerk, General Post Office, 7 Walker Street.
1896. THOMSON, J. MAITLAND, LL.D., Advocate, Curator of the Historical Department H.M. General Register House, 3 Grosvenor Gardens.
1898. THORBURN, MICHAEL GRIEVE, of Glenormiston, Innerleithen.
1896. TOMLINSON, CHARLES, South Cottage, Healey, Rochdale.
1898. TOUGH, WILLIAM, M.A., Bellevue, Barton Gardens, Davidson's Mains.
1877. TUKE, Sir JOHN BATTY, M.D., LL.D., M.P., 29 Charlotte Square.
1899. TULLOCH, Major-Gen. Sir ALEXANDER BRUCE, K.C.B., C.M.G., Llanwysk, Crickhowell, S. Wales.
1887. *TURNBULL, WILLIAM J., 16 Grange Terrace.
1901. TURNBULL, W. S., Aikenshaw, Rose-neath.
1850. TURNER, FREDERICK J., Mansfield Woodhouse, Mansfield, Notts.
1865. *TURNER, Sir WILLIAM, K.C.B., M.B., LL.D., D.C.L., Principal of the University of Edinburgh, 6 Eton Terrace.
1881. TWEEDDALE, The Most Honourable The Marquess of, K.T., Yester House, Haddington.
1901. *TWEEDMOUTH, The Right Hon. Lord, Hutton Castle, Berwick-on-Tweed.
1878. *URQUHART, JAMES, H.M. Register House.
1882. *USHER, Rev. W. NEVILLE, Wellingore Vicarage, Lincoln.
1895. VALLANCE, DAVID J., Curator, Museum of Science and Art, Chambers Street.
1862. *VEITCH, GEORGE SETON, Bank of Scotland, Paisley.
1904. WADDELL, JAMES ALEXANDER, of Leal-loch, 12 Kew Terrace, Glasgow.
1854. WALKER, R. C., S.S.C., Wingate Place, Newport, Fife.
1879. WALLACE, THOMAS, Rector of High School, Inverness.
1876. WATERSTON, GEORGE, 10 Claremont Crescent.
1904. WATLING, H. STEWARD, Architect, 86 Whiting Street, Bury St Edmunds.

1891. *WATSON, Rev. ALEXANDER DUFF, B.D.,
U.F.C. Manse, Bourtreebush, Stone-
haven.
1904. WATSON, JOHN, Architect, 25 Frederick
Street.
1895. *WATSON, ROBERT F., Briery Yards
Hawick.
1904. WATSON, WALTER CRUM, B.A. Oxon.,
50 Queen Street.
1893. WATSON, WILLIAM, Dep.-Sergeon-
General, The Lea, Corstorphine.
1887. WATT, JAMES CRABB, Advocate, K.C.,
46 Heriot Row.
1879. WEDDERBURN, J. R. M., M.A., W.S.,
3 Glencairn Crescent.
1877. WELSH, JOHN, Moredun, Liberton.
1872. *WEMYSS AND MARCH, The Right Hon.
The Earl of, LL.D., Gosford, Long-
maddy.
1884. WHITE, CECIL, 23 Drummond Place.
1904. WHITE, JAMES, St Wimin's, Bearsden,
Dumbartonshire.
1869. *WHITE, Col. THOMAS PILKINGTON,
R.E., 3 Hesketh Crescent, Tor-
quay.
1903. WHITELAW, ALEXANDER, of Gartshore,
Kirkintilloch.
1902. WHITELAW, CHARLES EDWARD, Archi-
tect, 168 Bath Street, Glasgow.
1885. WHITELAW, DAVID, Eskhill, Inveresk.
1894. WILLIAMS, FREDERICK BESSANT, 3
Essex Grove, Upper Norwood, Lon-
don, S.E.
1895. WILLIAMS, Rev. GEORGE, Minister of
Norrieston U.F. Church, Thornhill,
Stirling.
1897. WILLIAMS, HARRY M., Tilehurst,
Priory Park, Kew, Surrey.
1884. WILLIAMSON, Rev. ALEXANDER, D.D.,
39 Lauder Road.
1883. WILSON, Rev. Canon W. HAY, The
Parsonage, Dingwall.
1892. *WORDIE, JOHN, 42 Montgomery Drive,
Glasgow.
1903. WRIGHT, Rev. FREDERICK G., Chap-
lain to the Forces, Royal Victoria
Hospital, Netley.
1889. YOUNG, HUGH W., of Burghead,
Tortolla, Nairn.
1891. YOUNG, WILLIAM LAURENCE, Belvi-
dere, Auchterarder.

LIST OF THE CORRESPONDING MEMBERS

OF THE

SOCIETY OF ANTIQUARIES OF SCOTLAND.

(Elected since 1851.)

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| 1874.*ANDERSON, JOHN, M.D., Curator of the Imperial Museum, Calcutta. | 1851. FRENCH, GILBERT J., Bolton. |
| 1866. ANDERSON, JOSEPH, Wick. | 1877. GALLOWAY, WILLIAM, Architect. |
| 1876. ARNOLD, THOMAS, Architect, London. | 1864 GAUCHARD, M. LOUIS PROSPER, Keeper of the Belgian Archives. |
| 1865.*BARNWELL, Rev. EDWARD L., Ruthin, Wales. | 1873. GEEKIE, A. C., D.D., Bathurst, New South Wales. |
| 1865. BELL, ALLAN, of Abbot's Haugh. | 1864. GERGERES, M. J. B., Keeper of the Library, Bordeaux. |
| 1853.†BRUCE, Rev. JOHN COLLINGWOOD, M.A. | 1875 GILLESPIE, Rev. JAMES E., Kuggunzeon. |
| 1900. BUCHANAN, MUNGO, Falkirk. | 1865.†GREENWELL, Rev. Canon W., Durham. |
| 1873.†BUGGE, SOPHUS, Prof. of Icelandic, Royal University of Christiania. | 1866. GRIERSON, THOMAS B., Surgeon, Thornhill, Dumfriesshire. |
| 1870. CARMICHAEL, ALEXANDER A., Lochmaddy, South Uist. | 1864. HAGEMANS, GUSTAVE, Brussels. |
| 1875. CLEUZIOU, M. HENRI DU, Commissioner for Public Monuments, Paris. | 1889. HAIRRY, Captain EDWARD, F.R.C.S. |
| 1868. COOKE, EDWARD WILLIAM, R.A., London. | 1876.*HAY, GEORGE, Arbroath. |
| 1857. CURRY, EUGENE, M.R.I.A., Dublin. | 1867. HERBST, ARCHIVARY, Copenhagen. |
| 1874. DALGARNO, JAMES, Slains, Aberdeenshire. | 1865.*IRVINE, JAMES T., Architect. |
| 1888. DELORME, M. EMMANUEL, Secretary of the Chamber of Commerce, Toulon-e. | 1855. JERVISE, ANDREW, Brechin. |
| 1864.*DICKSON, ROBERT, L.R.C.S.E., Carnoustie. | 1860. KELLER, Dr FERDINAND, Zurich. |
| 1901. EELLES, F. C., Munross, Stonehaven. | 1859. KLEMMING, G. R., Stockholm. |
| 1851. FENWICK, JOHN, Newcastle. | 1877. LAING, HENRY, Seal Engraver. |
| 1878. FINDLAY, Col. the Hon. J. B., LL.D., D.C.L., Kittanning, Pennsylvania. | 1859. LANDSBOROUGH, Rev. DAVID, LL.D., Minister of Henderson U.F. Church, Kilmarnock. |
| | 1859. LAPPENBERG, Dr J. M., Hamburg. |
| | 1877. LAURENSEN, ARTHUR, Lerwick. |
| | 1867. LAWSON, Rev. ALEXANDER, Creich, Fifehire. |

Those marked with an asterisk subsequently became Fellows.

† These were subsequently made Honorary Members.

1861. LE MEN, M., Archiviste du Departement, Quimper, Finistere.
1864. LORIMER, Prof. PETER, D.D., London.
1877. LYON, D. MURRAY, Ayr.
1904. MACKIE, ALEXANDER, Abernethy.
1890. *M'LEAN, Rev. JOHN, Grandtully, Aberfeldy.
1897. MACNAUGHTON, Dr. ALLAN, Taynuilt.
1879. MAILLARD, M. L'Abbé, Thorigne, Mayenne, France.
1867. MAPLETON, Rev. R. J. M.A., Kilmartin, Argyleshire.
1876. MATHEWSON, ALLAN, Dundee.
1872. MICHIE, Rev. J. G., A.M., Migvie, Aberdeenshire.
1865. MILLER, DAVID, Ayrroath.
1861. *MITCHELL, ARTHUR, M.D., Deputy-Commissioner in Lunacy.
1871. MORRISON, Rev. JAMES, Urquhart, Elginshire.
1885. MORSING, CARLOS ALBERTO, C.E., Rio de Janeiro.
1863. NICHOLS, JOHN GOUGH, London.
1865. NICHOLSON, JAMES, Kirkcubright.
1903. RITCHIE, JAMES, The Schoolhouse, Port Elphinstone, Inverurie.
1871. RUSSELL, Rev. JAMES, Walls, Shetland.
1873. RYGH, Olaf, Prof. of Icelandic, Royal University of Christiania.
1873. SAVE, Dr. CARL, Prof. of Icelandic in the University of Upsala.
1852. SCOTT, ALLAN N., Lieut., Madras Artillery.
1872. SHEARER, ROBERT INNES, Thrumster, Catfiness.
1853. SMILES, JOHN FINCH, M.D.
1892. SUTHEBLAND, Dr. A., Inverigordon.
1860. TAIT, GEORGE, Alnwick.
1885. TEMPLE, CHARLES S., Cloister Seat, Uduy, Aberdeenshire.
1874. THOMSON, ROBERT, Shuna, Easdale, Argyll.
1868. *TRAILL, WILLIAM, M.D., St Andrews.
1862. TROYON, M. FREDERIC, Lausanne.
1857. WALKER, Rev. HENRY, Urquhart, Elgin.
1888. WATT, W. G. T., of Breckness, Orkney.
1864. WATTS, THOMAS, British Museum, London.
1865. WEALE, W. H. JAMES, of Bruges.
1857. WILDE, W. R., Royal Irish Academy, Dublin.
1872. WILSON, Rev. GEORGE, F.C. Manse, Glenlee, Wigtownshire.
1888. WRIGHI, Rev. ALBAN H., Prof., Codrington College, Barbadoes.

LIST OF HONORARY MEMBERS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1904.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1874.

The Right Hon. Lord AVEBURY, LL.D., D.C.L., High Elms, Farnborough,
Kent.

Sir JOHN EVANS, K.C.B., D.C.L., LL.D., &c., Nashmills, Hemel-Hemp-
stead.

1879.

Rev. Canon WILLIAM GREENWELL, M.A., D.C.L., Durham.

1885.

Dr HANS HILDEBRAND, Royal Antiquary of Sweden.

5 Dr ERNEST CHANTRE, The Museum, Lyons.

1892.

WHITLEY STOKES, LL.D., C.S.I., 15 Grenville Place, Cornwall Gardens,
London.

1892.

Professor LUIGI PIGORINI, Director of the Royal Archaeological Museum,
Rome.

Dr HENRY C. LEA, 2000 Walnut Street, Philadelphia.

1897.

W. M. FLINDERS PETRIE, D.C.L., LL.D., Edwards Professor of Egyptology
in University College, London.

10 JOHN RHYS, M.A., LL.D., Professor of Celtic, and Principal of Jesus
College, Oxford.

Sir FRANCIS TRESS BARRY, Bart., M.P., St Leonard's Hill, Windsor, and
Keiss Castle, Keiss, Caithness.

Dr SOPHUS MULLER, Secretary of the Royal Society of Northern Anti-
quaries, and Director of the National Museum, Copenhagen.

Dr OSCAR MONTELIUS, Professor at the National Museum, Stockholm.

1900.

EMILE CARTAILHAC, 5 Rue de la Chaine, Toulouse.

15 F. HAVERFIELD, M.A., Christ Church, Oxford.

J. ROMILLY ALLEN, 28 Great Ormond Street, London.

Rev. S. BARING GOULD, Lew Trenchard, North Devon.

ROBERT BURNARD, Huccaby House, Princetown, S. Devon.

CHARLES W. DYMOND. The Castle, Sawrey S.O., Lancashire.

LIST OF THE LADY ASSOCIATES
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1904.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1873.

The Baroness BURDETT COULTS.

1874.

The Dowager Lady DENBAR of Northfield, Duffus House, Elgin.

1883.

Mrs RAMSAY, Kildalton, Islay.

1888.

The Right Hon. The COUNTESS OF SELKIRK.

1890.

5 Mrs P. H. CHALMERS of Avochie.

1894.

Miss EMMA SWANN, Walton Manor, Oxford.

1895.

Miss H. J. M. RUSSELL of Ashiesteel, Galashiels.

Miss AMY FRANCES YULE of Tarradale, Ross-shire.

1900.

Miss M. A. MURRAY, Edwards Library, University College, London.

10 Mrs E. S. ARMITAGE, Westholm, Rawdon, Leeds.

LIST OF SOCIETIES, INSTITUTIONS, &c., EXCHANGING PUBLICATIONS.

The Society of Antiquaries of London.
The Royal Society of Antiquaries of Ireland.
The Cambrian Archaeological Association.
The Royal Archaeological Institute of Great Britain and Ireland.
The British Archaeological Association.
The Society of Architects, London.
The Architectural, Archaeological, and Historic Society of Chester.
The Derbyshire Archaeological and Natural History Association.
The Essex Archaeological Society.
The Kent Archaeological Society.
The Historic Society of Lancashire and Cheshire, Liverpool.
The Chester Archaeological and Historic Society, Chester.
The Architectural Society of the Counties of Lincoln and Nottingham and
Associated Societies.
The Society of Antiquaries of Newcastle-upon-Tyne.
The Somersetshire Archaeological and Natural History Society.
The Surrey Archaeological Society.
The Sussex Archaeological Society.
The Geological Society of Edinburgh.
The Berwickshire Naturalists' Club.
The Anthropological Institute, London.
The Wiltshire Archaeological Society.
The Royal Irish Academy.
The Bristol and Gloucestershire Archaeological Society.
The Numismatic Society, London.
The Shropshire Archaeological Society.

The Dumfriesshire Natural History and Antiquarian Society.
 The Edinburgh Architectural Association
 The New Spalding Club, Aberdeen.
 The Cambridge Antiquarian Society.
 The Royal Historical Society, London.
 The Society of Architects, London.
 The Literary and Scientific Society, The Museum, Elgin.
 The Yorkshire Archaeological Society, Leeds.
 The Perthshire Natural History Society, Perth.
 The Thoresby Society, Leeds.
 The Buchan Field Club, Peterhead.

FOREIGN SOCIETIES, &c.

The Royal Society of Northern Antiquaries, Copenhagen.
 La Société Nationale des Antiquaires de France, Paris.
 Antiquarische Gesellschaft, Zurich.
 Verein von Alterthumsfreunde im Rheinlande, Bonn.
 The Smithsonian Institution, Washington, U.S.A.
 The Canadian Institute, Toronto.
 The Museum, Bergen.
 Foreningen til Norske Fortidsmindesmerkers Bevaring, Christiania.
 The Royal Academy of History and Antiquities, Stockholm.
 The Bureau of Ethnology, Washington.
 The Peabody Museum, Cambridge, Mass., U.S.A.
 Gesellschaft für Nützliche Forschungen, Trier.
 Physio-Ökonomische Gesellschaft, Königsberg.
 Berliner Gesellschaft für Anthropologie, Berlin.
 Anthropologische Gesellschaft, Wien.
 Department of Mines, Sydney.
 Société d'Archéologie de Bruxelles, Belgium.
 Société des Bollandists, Bruxelles.
 L'École d'Anthropologie, Paris.
 Société Archéologique de Namur, Namur.
 Reale Accademia dei Lincei, Rome.
 Der Alterthums-gesellschaft Prussia, Königsberg.

Centralblatt für Anthropologie, Stettin.
 Société Archéologique du Midi de la France, Toulouse.
 L'Académie des Inscriptions et Belles Lettres, Paris.
 La Commissione Archeologica Comunale di Roma.
 La Société D'Anthropologie de Paris.
 La Musée Guimet, Paris.
 La Société Archéologique du Département de Constantine, Algeria.
 National Museum of Croatia, Zagreb, Austria-Hungary.
 The Bosnisch-Herzegovinisches Landes-Museum, Sarajevo, Bosnia.
 Bureau des Schweizerisches Landes-Museum, Zurich.
 The Geological Survey Office, Pietermaritzburg, Natal.
 Nordiska Museet, Stockholm.
 Museum of Northern Antiquities, The University, Christiania.
 The Royal Bohemian Museum, Prague, Austria.
 Societa Romana di Antropologia, Rome.
 La Société d'Histoire et d'Archéologie de Gand, Belgium.
 Kongelige Norske Videnskabers Selskab, Thronheim, Norway.
 Historische und Antiquarische Gesellschaft in Basel, Germany.
 La Société Finlandaise d'Archéologie, Helsingfors, Finland.
 La Société d'Anthropologie de Lyon, France.
 La Société des Antiquaires de l'Ouest, Poitiers, France.
 Der Historischer Verein für Niedersachsen. Hanover, Germany.
 Göteborg och Bohusläns Fornminnesforening, Stadsbiblioteket, Göteborg,
 Sweden.
 The Archaeological Survey of India, Simla.
 Verein für Nassauische Alterthumskunde, Wiesbaden, Germany.

FROM THE PUBLISHERS.

The Antiquary (Elliot Stock), London.
The Reliquary and Illustrated Archaeologist (Bemrose & Sons), London.
Portugalia, Oporto, Portugal.

PROCEEDINGS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND.

HUNDRED AND TWENTY-FOURTH SESSION, 1903-1904.

ANNIVERSARY MEETING, 30th November 1903.

THE RIGHT HON. SIR HERBERT MAXWELL, BART., LL.D., M.P.,
President, in the Chair,

Sir James Balfour Paul and Rev. Francis Gebbie were appointed
Scrutineers of the Ballot for the election of Office-Bearers and Councillors.

The Ballot having been concluded, the Scrutineers found and declared
the List of the Council for the ensuing year to be as follows:—

President.

THE RIGHT HON. SIR HERBERT E. MAXWELL, BART., LL.D., M.P.

Vice-Presidents.

THE RIGHT HON. THE EARL OF SOUTHBESK, K.T., LL.D.

ROBERT MUNRO, M.A., M.D., LL.D.

Lieut.-Col. A. B. M'Hardy, C.B.

Councillors.

Sir ARTHUR MITCHELL, K.C.B., M.D., LL.D., The Hon. HEW HAMIL- TON DALRYMPLE.	} <i>Representing the Board of Trustees.</i>	T. H. BRYCE, M.A., M.D. WILLIAM GARSON, W.S JOHN M. HOWDEN. Prof. P. HUME BROWN, M.A., LL.D. Prof. G. BALDWIN BROWN. Right Rev. JOHN DOWDEN, D.D. JAMES ROBERT REID.
Sir KENNETH J. MACKENZIE, Bart., <i>Representing the Treasury.</i> ROBERT BRUCE ARMSTRONG. THOMAS ROSS.		

Secretaries.

DAVID CHRISTISON, M.D.		The Hon. JOHN ABERCROMBY.
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For Foreign Correspondence.

THOMAS GRAVES LAW, LL.D.		WILLIAM K. DICKSON.
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Treasurer.

JOHN NORMAN, Actuary, 28 St Andrew Square.

Curators of the Museum.

Professor DUNS, D.D.		ALEXANDER J. S. BROOK
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Curator of Coins.

GEORGE MACDONALD, M.A.

Librarian.

JAMES CURLE, Junr.

A Ballot having been taken, the following were duly elected Fellows:—

D. J. CUNNINGHAM, Professor of Anatomy, University of Edinburgh
BAXTER GRAY, Springbank, Broughty Ferry.
Rev. JOHN GRAY, St. Patrick's Rectory, High Street, Edinburgh.
CHARLES MACDONALD, Solicitor, Glasgow, Dunglass Castle, Bowling
THOMAS MAY, F.E.I.S., Lomnay, Lower Walton, Warrington.
JOHN CHARLES MILLER, Agent, Commercial Bank, 133 West George
Street, Glasgow.

OLIPHANT SMEATON, 37 Mansionhouse Road, Edinburgh.

Rev. JOHN STUART, B.D., Kirkton, Hawick.

JAMES B. TAYLOR, Sherfield Manor, Basingstoke, Hants.

JAMES ALEXANDER WADDELL, of Leadloch, 12 Kew Terrace, Glasgow.

WALTER CRUM WATSON, B.A. Oxon., 50 Queen Street, Edinburgh.

The meeting resolved to record their sense of the loss the Society had sustained in the deaths of the following Members deceased since last Annual Meeting:—

Lady Associate.

	Elected
Mrs ANNIE CHAMBERS DOWIE,	1891

Honorary Member.

ALEXANDRE L. J. BERTRAND, Conservateur du Musée des Antiquités Nationales, Saint Germain en Laye, France . . .	1892
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Fellows.

Rev. D. DOUGLAS BANNERMAN, M.A., D.D., Perth,	1877
WILLIAM BOYD, M.A., 56 Palmerston Place,	1873
JOHN SHEDDEN DOBIE of Morishill, Berth,	1877
THOMAS L. GALBRAITH, Sheriff-Clerk of Stirlingshire,	1884
Rev. HUGH MACMILLAN, D.D., LL.D., Murrayfield Road,	1884
A. J. MITCHELL, Advocate, 60 Frederick Street,	1886
DONALD N. NICOL, M.P., Ardmarnach, Argyleshire,	1901
WILLIAM M. OGILVIE, Banker, Lochee,	1877
JOHN SCOTT, C.B. of Halkhill, Largs,	1895
ANDREW SMITH of Broompark, Lanarkshire.	1899
GEORGE H. M. THOMS of Aberlemno,	1874
ROBERT THOMSON, LL.D., 8 Sciennes Road,	1875
ALEXANDER WALKER, LL.D., Hamilton Place, Aberdeen,	1874
W. L. WATSON, Aytoun House, Abernethy,	1884

The Hon. John Abercromby, Secretary, read the following Report on the progress and work of the Society during the past year:—

Membership.—The number of Fellows on the Roll on the 30th of November 1902 was 705, of whom 178 were Life Members and 527

Ordinary Members. Of these we have to regret the loss of 14 by death : of 11 by resignation, and 5 have lapsed through non-payment of their subscriptions. This leaves a balance of 675 Fellows. To these must be added 34 new Members, making a total of 709 Fellows. Of these 176 are Life Members and 534 are Ordinary Members : a decrease of 2 Life Members and an increase of 7 Ordinary Members. The net gain in the year is therefore 4 : a small number, though perhaps as many as could be expected considering the great number of Societies and Associations of all kinds that exist, each competing with the other in the struggle for subscriptions and adherents to the cause that it champions.

Publications.—This year is rendered eventful in the annals of the Society by the publication of *The Early Christian Monuments of Scotland*, by Mr Romilly Allen, F.S.A., with an introduction by Joseph Anderson, LL.D. Many books are written in too great a hurry, without proper consideration, but this great work is produced after a preparation and gestation of fully eight years. It is a monumental volume : one of that rare kind that can scarcely be superseded, that can never get quite out of date, and must therefore remain the best book on the subject for many generations. Though it is of imposing size, containing 1062 pages and upwards of 2550 illustrations, it was issued to subscribing Fellows at the remarkably low price of £2, 2s., a sum too low for the excellence and importance of the work.

The Proceedings.—The volume for 1902-3 is smaller than that of last year, but contains 415 pages, many illustrations, and several papers of unusual interest. It is opportune at the beginning of a new Session to pass in review the results of the previous one, so as to co-ordinate the acquisitions to our knowledge in various departments. It shows what remains to be accomplished : it acts as a spur to further exertion. During the last Session there was no intermission of the perennial stream of archaeological and historical facts that find their way into the annual volume of the *Proceedings*. Several of these are of remarkable interest, and open up new vistas in the realm of Scottish archaeology.

Four papers concerned themselves with the Neolithic Period. Dr T. H. Bryce during a second year has continued and completed his excellent work of exploring the chambered cairns of Arran. Though the relics brought to light were less numerous and interesting than those of last year, yet our knowledge of the structure of these cairns is increased. At Carn Ban he found and planned what seems to have been a horned cairn, a structural arrangement hitherto observed only in Caithness. An account of the excavation of a circular-chambered cairn in Rousay, Orkney, of a different type from the Arran examples, was communicated by Sir William Turner and General Burroughs. It belongs to a well-known Orcadian type, but in this instance there was the novel feature that the passage diminished towards the exit to the dimensions of a drain. As is usual in Orkney, the chamber contained a skeleton interment. But more singular than the Rousay chambered cairn with its drain-like passage was the chambered mound in the district of Stromness, Orkney, opened by Mr Charleson. The singularity consists in the fact that the plan of the underground structure was more like that of a dwelling than of a sepulchre. It contained traces of human occupation, but no human remains. If Mr Charleson is right in his conjecture, we are confronted by something new and unexpected, by a chambered mound that was used for a dwelling. Even this does not exhaust all the surprises of last Session, though now they come from the other extreme of Scotland. Mr Mann read an elaborate paper on some pile-structures that he had very carefully excavated in Wigtownshire. They were found in five pits covering an area of about 10 feet by 8 feet, and were placed nearly in line. It would seem that they were not pile-dwellings in the sense that the piles supported a platform raised above the ground, upon which a house was constructed. Mr Mann arrived at the conclusion that the floor of the oval dwelling, though supported on piles, was at a depth of some feet below the surface of the ground, and that the walls of the pit were lined with wattle-work. How it was roofed is a matter of pure conjecture, though Mr Mann supposes it had a mound-like appearance. From neat experiments on bars of

soap he concludes that the piles were cut with stone, not with bronze or iron, axes. The only relics were of flint or other stone; and the shards of pottery, ornamented with a horizontal raised moulding at intervals, compare well with what Mr Knowles has frequently dug from the sandhills along the north coast of Ireland, and which he believes to be Neolithic. Now, if Messrs Charleson and Mann are right in their suppositions, Scottish Archaeology has been enriched in a single Session by the discovery of two types of Neolithic habitations, and before now not one was known. Yet they will both admit that more light is required, for single instances are unsafe foundations for positive statements of fact.

Bronze Age.—For a fourth year, Mr Coles, Assistant Keeper of the Museum, was awarded the Gunning Fellowship to continue his most useful work of planning and describing the stone circles and standing stones in Aberdeenshire. He reported on forty-two new sites. But it must be remembered that the presentation of these annual surveys of what is visible above ground is like a Barmecide feast unless the Society completes the work by excavating the sites with pickaxe and shovel. Besides the paper on Aberdeenshire circles, Mr Coles contributed another of equal value on stone circles, cairns, and cup-marked stones in other parts of Scotland.

The discoveries of new specimens of sepulchral pottery were perhaps less numerous than usual. But Mr F. Lynn reported upon and exhibited a food-vessel and a cinerary urn, both of well-known types, from Lauderdale. Some fragments of a smallish drinking-cup, apparently of late date, were reported from Inverurie. And a cinerary urn of overhanging rim type, from Lannington, was sent to the Museum by Lord Lannington.

Mr Graham Callander read a paper upon, and exhibited a collection of perforated stone objects from Garioch, Aberdeenshire, the exact age and precise use of which are points difficult to determine. In discussing their possible use the author hardly laid stress enough on the pro-

bability that many of these rude stones had a magic, prophylactic purpose—that suspended round the neck of man or beast they warded off the evil-eye, elf-bolts, and other malign influences.

Roman Antiquities.—The laudable task undertaken by the Society, some years ago, of exploring as thoroughly as possible the Roman remains in North Britain, was continued last year. Several months were spent in excavating the fort of Castlecary on the Antonine Wall. The results were placed on record in a model report, full of accurate detail, by Mr Mungo Buchanan, to whom the Society already owes much. It was preceded by a historical introduction by Dr Christison, and followed by an appendix, describing the relics in detail, by Dr Joseph Anderson. The conclusion arrived at is that the fort was built in connection with the vallum which forms its front face. It belongs, therefore, to the middle of the second century or about the year 142. Dr J. Anderson also observed that the Samian ware from Castlecary was later than some of that from Camelon. The exact length of time that the occupation of the fort by the Romans lasted was not ascertained. But it seems to have been of some duration, for Mr Buchanan found reason to believe that the buildings inside are not all of the same date, and that reconstructions had taken place while the Romans were in possession. That there were women and children in connection with the garrison is proved by the small sandals and shoes that had been thrown into the refuse-pit when no longer serviceable. Children's cast-off sandals have also been found in the Roman camp at Barhill on the Antonine Wall.

Post-Roman and Mediæval.—Mr Alex. Hutcheson, to whom the Society is indebted for many valuable contributions, described the discovery near Dundee of a skeleton, buried at full length in a stone cist lying east and west. It was accompanied by a penannular brooch, apparently of iron. On good grounds he assigns burials of this type to a comparatively recent time: in this case probably to the Viking period. Mr A. Johnston contributed a learned paper to show that the present

Bú of Orplur is the bú in Örfjara, where Earl Haraldr lived in 1136, according to the Orkneyinga Saga, and that the ruins of the round church existing there belong to the above period. Dr Ireland read a paper to show that Dr Skene was right in identifying Eileach an Naoimh with the Hinba of Adamnan. But neither mention an essential point in its identification. On the shore of the island is there any bay or creek large enough to be termed *Muirboly mar*? For there Vergnoux, a member of the religious community of Hinba, died. If the island possesses no "fair-sized bay" (*muirboly mór*) it cannot well be Hinba.

Sir James Marwick contributed a paper, interesting from a sociological point of view, on forestalling, regrating, and engrossing, which shows that the fiscal policy adopted by Scottish burghs was not always a wise one.

Accessions to the Museum.—Among the more interesting may be noted a collection of flint and stone implements, and objects in jet and bronze, from the sands of Glenluce Bay. A collection of flint implements from the Culbin Sands, and another from Tannadice, Forfarshire. A bronze flat axe from Mull; four bronze swords from Midlothian, and a fine Celtic penannular brooch of bronze from Mull. A silver spoon with the Cannongate Hall mark and the date 1589.

Mr G. Goudie exhibited a stone with portions of three lines of an Ogham inscription from Cummingsburgh, Shetland. Unfortunately, the legend, owing to the fracture of the stone, is imperfect, but Prof. Rhys believes it is written boustrophedon. It is gratifying to know that this stone will remain in the National Museum.

Exploration Fund.—I would call the attention of Fellows of the Society to a small fund of from £150 to £200 a year that has been established for the annual exploration of British prehistoric sites. All members of the Society are invited to make use of it on condition that the excavations are conducted with proper care and personal supervision; and that the reports on the work done, accompanied by sufficient plans, are read before the Society with a view to publication.

in the *Proceedings*. I urge members, especially the younger ones, that have the interests of Scottish prehistoric Archaeology at heart, to bestir themselves while there is yet time. For it is a lamentable fact that every year ancient monuments are swept out of existence, are annihilated or threatened with destruction, in the course of agricultural and other modern improvements. And at present the Fund depends upon a single life, which in the ordinary course of nature is not likely to last for more than eight or ten years.

The use of an Exploration Fund is incontestable. Yet I would draw the attention of the younger members who have to pass most of their time in Edinburgh, who have leisure for work, and also the use of the library, to another aspect of Archaeology, to its synthetic and constructive side. In the *Proceedings* there are figured, in the cases of the Museum there are exhibited, whole classes of objects that seem to cry out for some one to take a special interest in them and assign them a definite place in time. Take, for example, the perforated stone axes, the bronze daggers, swords and spearheads, etc. All that we know of them is that some belong to the beginning, others to the middle and end, of the Bronze Age. Such knowledge is vague and unsatisfactory. The whole tendency of modern Archaeology is to make clear what was obscure; to make more precise what was indefinite; to contract long stretches of time into far narrower limits. No mere accumulation of additional material to our Museums can effect this. It can only be done by bringing the action of the mind to bear upon the subject matter. My belief is that if these classes of objects were first classified in order of development and then linked on, where possible, to similar objects in England and on the Continent, the limits of time proper to each could be determined with far greater precision than at present. It might take four, five or more years to collect and arrange the material, but that is nothing for a young man, and the result would be worth the trouble. Scottish Archaeology would certainly be enriched thereby. Some day the work must inevitably be done. Archaeology is not merely a national study; it is also international. Of one thing you may rest

assured: if a task of this kind is not undertaken by the native-born Antiquarian, it will eventually be tackled by a foreigner with a Teutonic name, with a Teutonic hunger for hard work, and that to our shame and disgrace.

The Treasurer submitted a statement of the Society's funds, which was ordered to be printed and circulated among the members.

The Secretary read the Annual Report to the Board of Trustees, as follows :—

ANNUAL REPORT to the Board of Trustees for Manufactures in Scotland by the Society of Antiquaries of Scotland, with reference to the National Museum of Antiquities under their charge, for the year ending 30th September 1903 :—

During the past year the Museum has been open to the public as formerly, and has been visited by 16,323 persons, of whom 1166 were visitors on pay days, and 15,157 on free days.

The number of objects of antiquity added to the Museum during the year has been 163 by donation and 376 by purchase. The number of books added to the Library has been 109 by donation and 71 by purchase.

Among the more important additions to the Museum may be mentioned the collection of Professor Duns, D.D., consisting of 230 objects, chiefly Scottish, which has been acquired by purchase, and an Ethnological collection of 90 objects which has been presented to the Museum by Professor Duns.

D. CHRISTISON, *Secretary*.

MONDAY, 14th December 1903.

ROBERT MUNRO, M.D., LL.D., Vice-President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

JAMES SHELLEY BONTEIN, J.P., of Glencruitten, Argyleshire.

JOSEPH D. CAMPBELL, Solicitor, 142 West George Street, Glasgow.

W. M. MACKENZIE, M.A., 20 Wilton Gardens, Glasgow.

The following articles and books, acquired by the Purchase Committee for the Museum and Library during the recess, 4th May to 30th November 1903, were exhibited :—

Gold spirally-twisted Torc Armlet, $3\frac{1}{2}$ inches in diameter, with recurved ends, found on the farm of Cothill, Bellhelvie, about 1835. Weight 8 dwt. 9 grains.

Screw-bolt of iron, $7\frac{1}{2}$ inches in length, with the figure of a man in armour on the one end, found in digging at Lethendy.

Carved Highland Powder Horn, $10\frac{1}{2}$ inches in length, with the initials I. C. and W. F., and date 1686.

Two Bronze Axes, from Llanbryd, Morayshire. One is a flat axe $4\frac{5}{8}$ inches in length and $2\frac{5}{8}$ inches across the cutting face, the surface much corroded, but showing slight traces of punched chevrony ornamentation. The other has slight flanges and is $4\frac{7}{8}$ inches in length and 2 inches across the cutting face. It was found on the farm of Aultonside, Llanbryd.

Ornamented Stone Cup, found at Balmacalan, Glenurquhart. This chalice-shaped stone cup is figured in the *Proceedings*, vol. xxxiii., p. 168.

Slab of Sandstone, with portions of three lines of an Ogham inscription, found at Cummingsburgh, Shetland. It is figured in the *Proceedings*, vol. xxxvii., p. 350.

Ornamented Flanged Axe of bronze, from Jordanhill, Meigle. It is $5\frac{7}{8}$ inches in length by $2\frac{7}{8}$ inches across the expansion of the cutting face, and $1\frac{1}{2}$ inches across the butt. The flanges are very slight, and there is no stop-ridge. The sides are ornamented with cable-fluting, and one side has in addition marginal rows of punched depressions about half an inch apart. On the flat faces, $1\frac{1}{2}$ inches above the cutting edge, is a horizontal band of small zig-zags; and immediately above them are two triangles of punched ornamentation, their broad bases parallel to the inner line of the flanges on either side, and their apices meeting in the middle. The ornamentation is almost similar to that on a flanged bronze axe from Ireland figured in Evans's *Bronze Implements*, p. 66, fig. 38.

Two polished Stone Axes found together in digging in a peat-moss near Lerwick, Shetland. They are fine examples of a common Shetland type, with cylindrically conical butts, widening to a strong and boldly-rounded cutting edge. They are nearly of the same size, and both are made of the same kind of darkly-mottled porphyritic stone, one measuring $11\frac{1}{2}$ inches in length and $3\frac{3}{4}$ inches across the cutting face, and the other 11 inches in length by $3\frac{1}{2}$ inches across the cutting face. It is very rarely that stone axes are found together.

Stone Axe, ornamented with a slightly incised interlaced pattern; and another Stone Axe, polished and plain, found at Balnahannait, Loch Tay. The ornamented axe has been figured in the *Proceedings*, vol. xxxv., p. 311.

Three ornamented Stone Whorls, found in the neighbourhood of Hawick.

Two polished Axes of clay-slate, one measuring $5\frac{1}{4}$ inches in length by $2\frac{1}{2}$ inches across the cutting face, and having both ends the same shape; the other measuring $4\frac{3}{8}$ inches in length by $2\frac{1}{4}$ inches across the cutting face, the butt end broken: both found on Kirtou Farm, near Hawick, Roxburghshire.

Small polished Axe of greenstone, 2 inches in length by $\frac{7}{8}$ inch across the cutting face and $\frac{1}{2}$ inch across the butt, found in a garden at Hawick.

Polished Stone Axe, $4\frac{1}{8}$ inches in length, by 2 inches across the cutting face, from Stonykirk, Wigtownshire.

Whorl of clay-slate $1\frac{5}{8}$ inches in diameter, ornamented with radial lines on both faces, and on the periphery with two marginal lines and lines crossing from one to the other at intervals, found in digging a drain near Delvine, Perthshire.

Rapier, $26\frac{3}{4}$ inches in length, found at Hilton Castle, Berwickshire.

Books for the Library.—St. Fond's Travels in Scotland, 2 vols., 1799; Transactions of the Buchan Field Club (1887–1902), 6 vols.; Roessler's *Celtica*: Mortillet's *Musée Préhistorique*, 2nd edition; Antiquarian Supplement to Scottish Art and Letters: Hamilton's *Art Workmanship of the Maori Race in New Zealand*: Johnston's *Place Names of Scotland*, 2nd edition; The Jacobite Peerage: Journal of Hellenic Studies, vol. xxiii.; Report of Departmental Committee on the Board of Manufactures: *Musées et Collections Archéologiques de l'Algérie et de la Tunisie*, Part i., Musée de Timgad.

There were also exhibited.—

- (1). By W. W. ROBERTSON, F.S.A. Scot., H.M. Principal Architect and Surveyor of Works for Scotland, through GEORGE ROBERTSON, F.S.A. Scot., Keeper of the Abbey at Dunfermline.

Two large Photographs of a Norman Doorway, recently discovered in Dunfermline Abbey Church.

The following description of the doorway was given by Mr George Robertson:—

The doorway is at the south-east corner of the ancient Abbey Church. It has been built up for many years with rough rubble stones, and though a plain archway was seen on the interior wall, it was not known that the rubble concealed a Norman doorway of highly ornamented and interesting character. The plain-bordered doorway, which showed inside, is 10 feet 6 inches in height from the floor of the church, and 5 feet 5 inches wide. Underneath the arch of this doorway, and back

from the face of the wall, is the ancient doorway, measuring 9 feet 7 inches in height, and in width about the same as the other. Nothing is seen of either doorway outside the church, owing to the burial-vault of the Wardlaws, baronets of Pitreavie, being built against this part and concealing the outlet. The date of this roofed Wardlaw vault is 1616, so that there has been no outlet by the doorway since then. The discovered doorway is of purely Norman architecture, and of the same age and character as the church. Its arch is decorated with deeply-cut and moulded chevron ornament, and the supporting attached columns have the well-known Norman abacus with raised ornament of scroll or floral design on the cushion capitals. Though little of the rubble has as yet been removed, it can be seen that the chevron is carried back on the soffit of the arch, through the thickness of the wall—which is about 2 feet 8 inches—and other columns and capitals can be partially seen behind. The photographs well show the character of the whole. The transverse stone below the capitals, cutting into the columns at each side, had evidently been placed later to form a receptacle for the skeletons of two young persons which were discovered amongst a mass of large and small rubble and lime in the space beneath the transverse stone. These skeletons had probably been removed from some other burial-place, as there was no trace of coffin-wood nor any other thing such as nails, or metal in any form. The skeletons, which have been re-interred in the churchyard, are those of youths from eight to ten years of age. They appear to have been placed "heads and thraws"—one skull being to the east and the other to the west. But the body and limb-bones were so much separated, and so much mixed up with the debris of stones and lime, that their original position in the chamber could not be definitely ascertained. The discovery was made when a place was about to be given in the church for the erection of a mural memorial to soldiers of the Western district of Fife who died in the late South African War. Another mural position in the church has been given for that memorial, which it now occupies.

I understand that His Majesty's Board of Works intend to have the old doorway cleared out, and all repairs executed that may be required for preservation.

The photographs are presented to the Society by Mr W. W. Robertson.



Fig 1 Snuff-box of Carved Ivory in form of a Highlander. (1/4),

(2). By CHARLES E. WHITELAW, F.S.A. Scot.

Carved Ivory Snuff-box (fig. 1), representing a three-quarter length figure of a Highlander, fully accoutred—period about 1715.

Mr Whitelaw has supplied the following description of the figure : —
“ This Ivory Snuff-mull, $3\frac{3}{4}$ inches high by $1\frac{3}{4}$ inches broad, is carved to represent the three-quarter length figure of a Highlander fully accoutred. The workmanship is fine, showing all the details with minute care. It was probably carved in Dieppe for some Jacobite, waiting an opportunity to cross over to Scotland. The person represented is a man over middle

age, with his hair in ringlets down to his shoulders, and a moustache brushed up at the ends. He is clothed in a belted plaid fastened at the shoulder by a pin (not a brooch), and wears a flat bonnet with a cockade attached to the right side. His tunic is unbuttoned, showing the cambrie stock and gathered shirt. The armament is noteworthy. He is represented as carrying on his left arm a targe, tooled with Celtic ornament, while with his right hand he draws his backsword, of the usual type with the pierced basket hilt, the scabbard being suspended by two short straps from the waist-belt, and not slung in a broad cross-belt as usual. From the waist-belt are suspended: from the centre, a dirk, apparently of the type having the handle carved with two bands of interlaced work, and the sheath carrying a knife only: to the right of the dirk hangs a gathered leather sporran (without clasp), and on the left, under the arm, a pistol with the "kidney" form of butt. He has his powder-horn slung over his left shoulder, and there is another small strap over his right, the purpose of which is not evident."

The following Communications were read:—

I

ON THE CAIRNS AND TUMULI OF THE ISLAND OF BUTE. A RECORD
OF EXPLORATIONS DURING THE SEASON OF 1903. BY THOMAS
H. BRYCE M.A., M.D.

The Island of Bute is comparatively rich in the monuments of prehistoric times. This paper will deal, however, only with the cairns and tumuli, of which a number still survive out of a larger series, concerning which a record of one sort or another exists.

As was to be expected from the cultivated state of the Island, all the sites have suffered severely from previous disturbance, but the measure of success which has attended the work is greater than my preliminary survey led me to anticipate.

Even a much-ruined structure may supply the missing line from a record which can now only be pieced together from numerous fragments, and my experience again proves that the method of systematic digging-out of all structures, however dismembered, within a given area, may yield results beyond expectation.

The exploration received the sanction of the Marquess of Bute, and I beg to express my sense of obligation to him for the favour, and for the opportunity of placing in the Museum a number of objects of value. The work was greatly facilitated by the help kindly rendered by Mr J. Windsor Stuart, who solved the labour problem by providing me with men from his estate squad.

I must also record my thanks to Dr King Hewison, minister of Rothelay, who directed me to a number of the sites, and whose list of prehistoric monuments in the Island, published in his work *Bute in the Olden Time*, proved very helpful.

The structures I have explored may be grouped into four classes :

A. Chambered cairns.

B. Short cists placed either (*a*) within cairns or tumuli, or (*b*) under the surface with no overground structure remaining to mark the site.

- C. Tumuli containing a burnt interment without a cist
- D. Mounds in which no interment was discovered.

A. CHAMBERED CAIRNS.

In my earlier memoirs on the Cairns of Arran, I have been able, by gathering together the data yielded by the exploration of thirteen examples of this class of structure, to reconstruct a type of chambered cairn occurring in the south-west corner of Scotland: and as I have found the same type to prevail in Bute, it will facilitate my descriptions if I repeat my definition of it.

It is a large rectangular cairn, with a definite ground-plan once marked off in all probability by a setting of flagstones. At one end this setting is disposed in a semicircle, and bounds a space leading to the portal of a chamber which occupies one end of the cairn. The chamber is formed of two sections,—a deeper, built of large stones set on edge, bounding a trench-like space divided into compartments by septal slabs set right across the floor: and an upper, built of small flags placed horizontally upon the upper edges of the stones forming the basal portion. The object of this upper section is twofold: to afford head room within the chamber, and to provide a level surface for the roofing flags to rest upon. There is no passage of approach, but merely a portal of entrance placed some distance above the floor. The compartments contain the remains of several successive interments, the bones being in some cases unburnt, in others burnt. Associated with the interments are found implements of stone only, and vessels of pottery made of a dark paste and with rounded bottom.

I. BICKER'S HOUSES CHAMBER.

This monument stands on the open moor, in a broad valley between Barmore Hill, which overlooks the lower end of Loch Fad on the west, and Kilmory Hill. It is not marked on the Ordnance Map, and was first described by Rev. Dr Hewison.¹

Bute in the Olden Time.



Errata in names on map.—For Rulchedean read Rulcheddan.
For Slenibuline read S. Lenibuline.

Close to the chamber are the ruins of some cottages called Bickers Houses, now converted into sheepfolds, and the remains of fallen walls which mark off an area of land once cultivated, but now reverted to moorland and covered with heather and blaiken.

The cairn has been the convenient quarry out of which the buildings and walls have been constructed, and little of it now remains. The mass of stones left, however, indicates that it must have been a very large cairn, at least 100 feet long. There is now no trace of any series of flags marking off the outline, nor any signs of a semi-circular setting at the end adjoining the chamber.

Before excavation, only the tops of two of the flags of the chamber wall projected a little above the surface at the south end. The roof has been here removed, and the whole upper small flag section of the walls has collapsed except at one part. At the north end, however, one of the large roofing flags remains still *in situ* (figs. 1 and 2). It is a large and heavy block of schistose rock, 7 feet 3 inches in one diameter, and 6 feet 10 inches in the other, 1 foot 9 inches thick at one edge, tapering at the other to 6 inches. The upright stone (A on plan, fig. 3) stands 4 feet 10 inches above the ground, is 2 feet 4 inches broad, and 1 foot 8 inches thick. It bounds the portal on the east, and owing to its weight, and grip of the ground, into which it is imbedded to the depth of 20 inches, it has stood fast in the general collapse of roof and wall. The opposite portal stone, on the other hand, had fallen when the weight of the flag, owing to the fall of the wall beyond, came to bear on it, and now lies on its face under that stone. When cleared out, the chamber was found to be a segmented chamber of the Arran type. The trench contained many large stones and small flags, the debris of the upper part of the walls. It measures 15 feet over all, and has an average breadth of 3 feet 4 inches. Its long axis lies north-east and south-west. It is divided by two septal slabs into three compartments. Of these the middle is the largest, being 5 feet in length; the other two are each 4 feet long.

The stones forming the Megalithic section of the chamber are rough



Fig. 1. Bieker's Houses Chamber from the north-east, showing portal of entrance.



Fig. 2. Bicket's Houses Chamber from the south-west, after excavation.

and irregular blocks, or rude flags, of schist, placed approximately parallel to one another—with the exception of the west stone of the

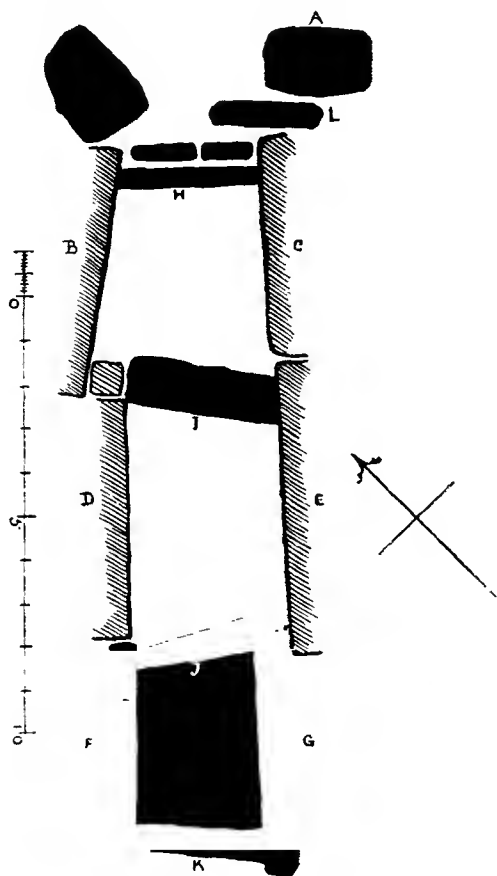


Fig 3. Plan of Bicker's Houses Chamber.

northern compartment (B), which diverges outwards. This displacement has occurred in the setting of the stone, and has necessitated a building in of smaller stones between it and the first septal stone, as indicated in

the plan (fig. 3). The south end of the chamber is closed by an end stone (K), 4 feet 3 inches high, the north end by a low flag (H), standing 18 inches above the floor.

As the structure stands on a slope, with the portal at the higher end, the south compartment is deeper than the middle, and that deeper again than the first. Thus, while the slab H is 18 inches high, I stands 1 foot 10 inches, and J 2 feet 2 inches above the floor.

The lateral stones are of very varying heights. Beginning at the north end, the west stone (B) is 3 feet 10 inches, the east (C) 2 feet 6 inches; of the second pair, the west (D) is 2 feet 2 inches, the east (E) 3 feet 2 inches; and of the third pair, the west (F) is 5 feet 1 inch, and the east (G) 2 feet 10 inches in height. Owing to the slope of the ground, the south stone (F) on the west side is on the same level as the north stone (B), though it is more than a foot higher; and owing to the protection afforded by them, a portion of the wall built of small flags is preserved between them. The middle stone (D) of the series, as above noted, is only 2 feet 2 inches high from the floor to its upper edge, and on that upper edge are two flags laid horizontally and seen in figure 2. They overlap into the chamber, and show clearly how the walls were carried up to the level of the under surface of the roofing flag. From the under surface of this flag, where it rests on the portal stone, to the floor of the chamber is 7 feet, so that the small flag section of the wall must have been about 3 feet to 4 feet 6 inches, according to the depth of the Megalithic section—with this exception, that the south stone of the western series (F in plan) must have nearly reached, if it did not quite reach the roof, seeing that the roofing slabs always overlapped from the portal inwards. In this case the terminal roofing stone probably rested on the end stone (K), the upper edge of which is on the same level as F. Lying on each side of the south compartment, and within it, were flags obviously belonging to the upper part of the wall.

From this description it will be clear that what remains of the chamber corresponds in every essential detail with the Kilmory chamber in Arran.

The portal is placed 2 feet above the upper edge of the transverse stone marked H in the plan, and differs a little from that of the Kilmory chamber, but agrees closely with that of the Giant's Grave, Whiting Bay.¹

Beyond the actual chamber walls there is the upright stone already mentioned on which the large flag rests: and behind that is another (L) 2 feet 8 inches long and 4 feet high, encroaching further on the portal space, so that where the other side of the entrance was intact only a very narrow chink, not more than 18 inches, can have been left. It may seem that this is a matter of small importance: but as there can have been no other means of access to the vault, it has some bearing on the form in which the remains of the dead were placed therein. In both the Giants' Graves at Whiting Bay, where the portal space is little more than a foot, and in this chamber, the deposits were of burnt bones, so that there is no question of a body being transferred entire through the narrow entrance.

Each compartment contained the dark soil, with portions of charcoal intermingled, found in all these chambers. The floor was covered with a layer of charcoal and ash. Only one fragment of bone was recovered, but it was a piece of burnt bone, and the difficulty again presents itself as to how and why the bones have disappeared.

Only one flake of flint was picked up, but in the south compartment the fragments of the urn represented in fig. 4 were found; and in the north compartment several fragments of three other urns (figs 5, 6, 7) were recovered.

Number 1 (fig. 4) is $3\frac{3}{4}$ inches in height: the under portion or body is uniformly rounded and is much blackened. It ends above in a shoulder $5\frac{1}{2}$ inches in diameter, from which the upper portion or brim inclines inwards to the mouth, which is 4 inches across. The lip is quite thin. The type of decoration is peculiar. It consists of six groups formed of three rows of dotted impressions on the brim: but there is a degree of irregularity in the arrangement, and the impressions are not symmetrical, indicating that they must have been done freehand.

¹ See plan p. 48 of my paper, *Proc. Soc. Antiq. Scot.*, vol. xxxvii, 1902.

with a pointed tool. Under the shoulder there is a double range of similar impressions, but only round one-half of the circumference, the remainder being occupied by a double range of roughly-made short vertical

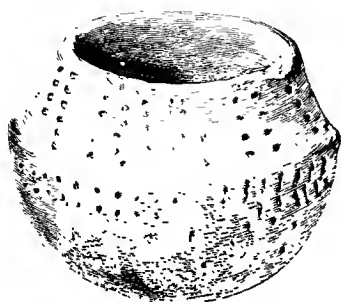


Fig. 4. Urn from south compartment Bicker's Houses Chamber. (Scale, $\frac{1}{4}$.)



Fig. 5. Urn from north compartment Bicker's Houses Chamber. (Scale, $\frac{1}{4}$.)

lines. These occur also on the brim without apparent motive, and over the rounded body there are some scattered dots, also without grouping.

Number 2 (fig. 5) is a very small vessel. It stands only $2\frac{5}{8}$ inches



Fig. 6. Urn from north compartment Bicker's Houses Chamber. (Scale, $\frac{1}{4}$.)



Fig. 7. Fragment of Pottery from north compartment Bicker's Houses Chamber. (Scale, $\frac{1}{4}$.)

high, and measures $3\frac{1}{2}$ inches across the mouth. It has no decorative pattern, and the paste is coarse and of a greyish colour.

Number 3 (fig. 6) is a fragment of a vessel $4\frac{7}{8}$ inches in height,

with a brim of $6\frac{1}{2}$ inches in diameter. The mouth is bounded by a flat projecting lip, and both it and the body of the vessel are quite plain. The paste is blackened outside, but is slightly reddish within.

Number 4 (fig. 7) is a portion of a larger and thicker vessel. The paste is very dark and coarse, and is much blackened. As the rest of the fragments could not be put together, its shape cannot be arrived at, but no portion of a flat base occurs among the fragments. The lip is rather thin but not everted, and there is a slight indication of a horizontal row of markings under the rim.

II. CARNBAAN—SOUTH LENIHULINE WOOD.

This structure, unlike the last, has been long an object of interest, and the subject of much irrelevant discussion. It stands in the upper part of South Lenihuline Wood, on the western shore of Bute.

Blain (pp. 100–101) describes it thus:—"A pile of stones thrown together in a rude manner along the surface of the ground in the form of a cross, the body whereof has been about 168 feet long by 15 in width, and the transverse about 75 feet or thereabout. Of this last little now remains, as the fence of the wood has been cut against it, and the most of the stones of which it is composed, carried off to help in facing up the enclosure there, and in its neighbourhood. The shaft of the cross was all along formed below into cavities or chests by the placing of large broad stones at the sides, end, and bottom of each, or where stones of sufficient size were not at hand, it was done of common masonry, without any sort of mortar: all of them had been covered with other flat stones. They were discovered on taking away materials for the neighbouring fences, where many of them were destroyed or filled up. A few, after having been looked into, remain unfilled, and were left uncovered until about a dozen years ago, that the farmer finding some of his sheep occasionally fell in, and not being able to extricate themselves perished by famine, he filled them up or had them destroyed, except one left for a specimen, but so far covered as to prevent sheep from entering."

In 1858 John Mackinlay gave a brief description of the cairn in the *Proceedings* of this Society (vol. iii. part ii., p. 180). "It consists," he writes, "of a mound of stones 200 feet in length lying east and west, and from 15 to 24 feet in breadth. Near its east end is a transverse piece, like the transom of a cross 47 feet in length. When the wood was enclosed, many years ago, the portion of the stem of the cross (about 25 feet in length) above the transom, which projected beyond the line of the wood, was removed, and its materials were used in the construction of the fence: but the form and extent of the part removed was (and I believe still is) perfectly distinct, its outline being defined by a line of small debris. At the west end of the stem of the cross there is a cell, 4 feet 6 inches long by 2 feet 3 inches wide and 3 feet deep, the top, sides, and ends of which are formed of flags of schistus. The country people believed that there was a series of such cells all along the body of the cross; and in order to ascertain this point, I took a labourer with me in the summer of 1833, and opened up the top of the mound all along, at short intervals, and found that the whole of the mound was composed of shapeless lumps of wacken, schistus, and quartz, about the size of a man's head, and apparently brought from the channel of the burn, at the bottom of the bank on which it is placed: and I could find no trace of any cells or any flags capable of making them, except one or two near the intersection of the cross where it is said that a cell or cells were found at the time the east end was removed."

The Rev. Dr Hewison¹ corrects and amplifies these statements. He writes "The cairn is now a long congeries of moss- and grass-grown stones broken from the slate-rock cropping up in the vicinity, and extends within the wood 165 feet, varying in breadth from 15 to 19 feet over its irregular ridge, and 5 feet high. The Ordnance surveyors make the cairn terminate in a circular mound within the fence which, as Blau states, severed the cross head: but beyond this fence and to the east a slight mound some 20 feet in diameter is still visible at the east end. The cairn declines westward. At its west-south-west end it termi-

¹ *Notes on the Obelisk Cairn.*

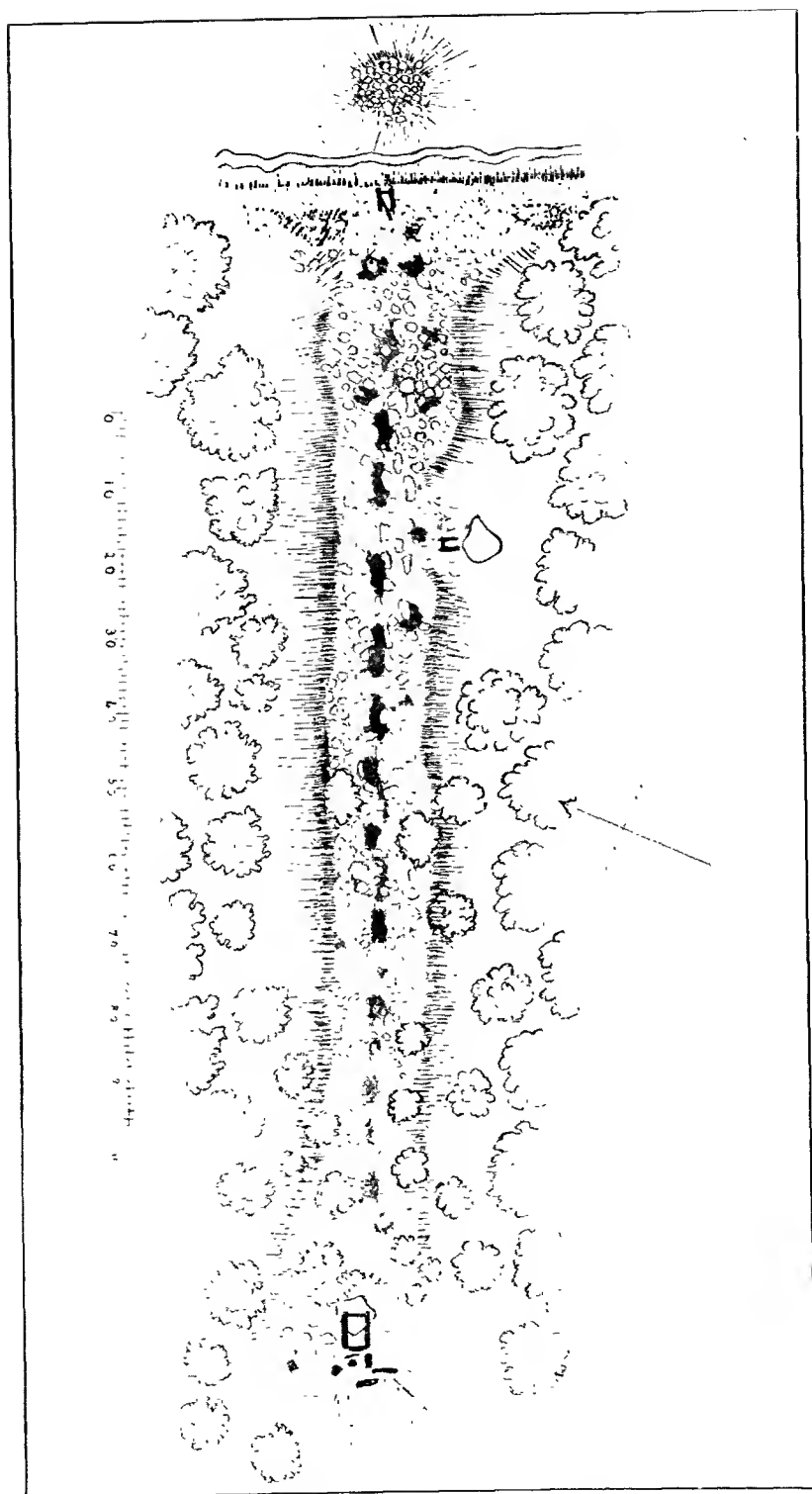


Fig. 8. Sketch Plan of Cambaan in South Lenthulne Wood.

nates in a circular congeries of stones, moss- and grass-grown, 22 feet in diameter, in the centre of which remains a cell, partly covered by a flagstone.' He gives the measurements of this, and proceeds: "At a distance of 30 feet from the east end another quite intact oblong cist is exposed on the south side of the main body of the cairn, its greater length being at right angles to the direction of the cairn. It consists of four slabs set on edge, and measures internally 3 feet long, 2 feet broad, and 2 feet deep. The covering, which is a ragged triangular slab, measures 5 feet 6 inches long, 4 feet 6 inches broad (at its broadest part), and 5 inches thick, and rests partly over and upon the cist.

"No fewer than fourteen cavities exist along the length of the stone-formed ridge, but it would, in their present confused and ruined condition, be hazardous to infer whether these were each an independent cist, or only parts of a continuous passage throughout the cairn. The stones lying in these holes vary in size from 1 foot to 3 feet or more.

My measurements agree closely with those of Dr Hewison, but it is difficult to be exact in a surveyor's sense owing to the undergrowth in the wood, so the figures are only approximate.

The maltreatment which the cairn has received at the hands of fencers, farmers, and antiquarians has left nothing to be done in the way of excavation. I therefore contented myself with planning the cist at the west-south-west end, and two secondary cists at the east-north-east end, and repeating Mr Mackinlay's operations along the ridge. Of course, it need hardly be said that the cross-shape is merely an accident of, or rather incident in, the demolition of the cairn. It is probable, though by no means certain, that the cairn outside the wood is, as all the observers have thought, a portion of the original cairn. If this be so, the whole is more than 180 feet long, and the largest cairn I have seen in this part of Scotland. I make the present breadth, counting in the slope on each side, from 24 to 33 feet. The back of the cairn consists of massive stones, and I presume that the demolition proceeded from both sides till only this central ridge remained. I removed the stones at various

points along the cairn, and agree with Mr Mackinlay that there is no built structure at any point, and no sign of a passage.

The west-south-west end has a greater breadth than the average of the ridge, being about 30 feet across. The "cell" (figs. 9 and 10), lies in the long axis of the cairn. It measures internally 4 feet by 2 feet 8 inches,



Fig. 9. View of Cist at west-south-west end of Carnbaan.

broadening at the floor to 3 feet, and the lateral stones are each 5 feet 6 inches long by 10 inches to 1 foot thick. There are two transverse stones remaining, the outer one being on a lower level than the lateral members. The depth is a little over 3 feet. On the occasion of my visit it was partially filled with water, and as it had long ago been rifled I considered any excavation useless.

The covering stone is 5 feet 10 inches in its longest diameter by 5 feet in the other. It rests on the lateral stones, which are practically on the same level. It is impossible to say whether this is its original position, or whether there had been any upper built section to the walls.

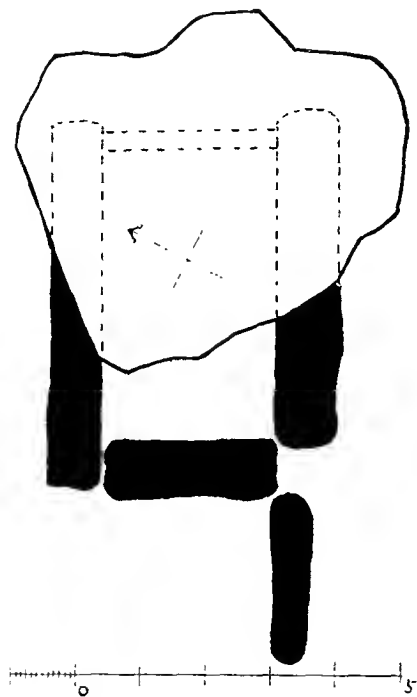


FIG. 19. Plan of Cell at west-south-west end of Caruban.

The outstanding stone is 2 feet 6 inches long, 7 inches thick, and 3 feet high.

This free-standing stone is in a line with the lateral stone of the "cell" and my first conclusion was that it was the lateral stone of a second compartment, the intact compartment being the last survivor of a segmented chamber of the Arran type. In this conclusion I was sup-

ported by Blain's statement that there were a number of "cells" which were removed, one only being left as a specimen. The outstanding stone is, however, very short for the lateral stone of a chamber, and it is clear that the arrangement cannot have been such as occurs in the typical examples of the class. While, therefore, it may have been a chamber constructed like that next to be described—Michael's Grave—it is not impossible that there may never have been more than one



Fig. 11. View of Chamber called Michael's Grave from the south-east.

compartment, as in the Glecknabae chambers to be described later, and that the free-standing stone is a survivor of two portal stones like those possessed by these chambers, or by a similar Megalithic vault at Ardnadam on the Holy Loch.

III. MICHAEL'S GRAVE, KILMICHAEL.

The chamber which goes by this name stands on an elevation in a field near the Chapel of St Michael, at the north end of Bute. It is entirely denuded, and the base of the cairn alone remains, extending

over about 34 feet. As seen in the photograph (fig. 11), certain of the stones forming the vault stand free above the surface to a considerable extent, and its main outline and its portal could be made out before excavation. The roof is now displaced, but one of the large roofing flags lies on the slope below the chamber. It is a slab of schist measuring 7 feet 3 inches by 4 feet 7 inches, and is from 10 to 12 inches thick.

When cleared out, the chamber was found to measure 10 feet 6 inches in length, with an average breadth of 2 feet 6 inches (fig. 12). Thus it is unusually short and narrow compared with those I have described in earlier papers. Its axis lies east-south-east by west-north-west, and the portal is placed at the eastern end. The portal stones are *in situ*. The space between them is only 1 foot 1 inch. The south block is 5 feet 7 inches in height, more than one-half of which is beneath the surface, and forms the end wall of the chamber on its own side (fig. 12). It is 2 feet 4 inches broad and 9 inches thick. The other member is smaller, being 1 foot 3 inches broad and 10 inches thick, and is only 3 feet 5 inches tall, with its upper edge on the same level as its neighbour.

In a line with these stones stand three small flags on edge, and in a photograph in Dr Hewison's book, taken more than a decade ago, appear two others. It is possible that these may have formed a setting bounding the space in front of the portal, but, again, they may be merely portions of the chamber fortuitously placed.

The chamber is divided by a single septal stone into two compartments, each 5 feet in length (fig. 13). The upper edge of the septal slab is nearly 6 feet below the highest point of the chamber wall, and it stands only 18 inches above the floor. There is no cross stone at the portal end, but the chamber is closed at its west end by a tall stone 2 feet 9 inches broad and about 5 feet high.

The chamber walls differ in some respects from those of the chambers formerly described. The east compartment has two tall stones on its south side, but only one on the north; the interval between it and the lateral stone of the second compartment being filled up by building with small stones (fig. 13). The two stones placed opposite one another are



Fig. 12. Chamber known as Michael's Grave, after excavation.

7 feet 6 inches and 6 feet 3 inches high respectively, measured on their inner faces, and they lean towards one another, approaching to a distance of 2 feet from one another above, while at their bases they are

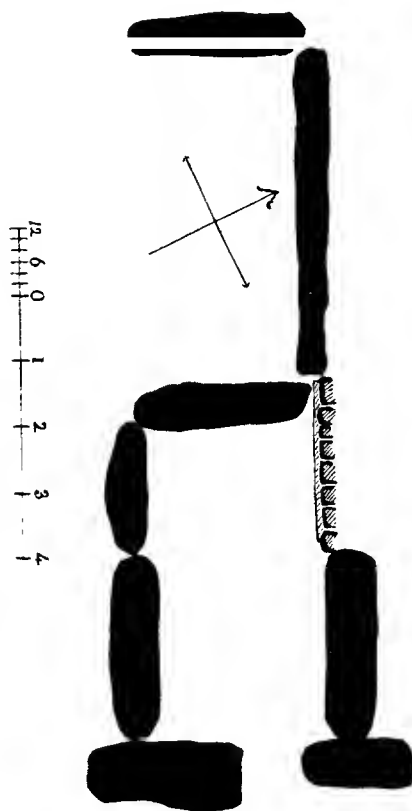


Fig. 13. Plan of Chamber known as Michael's Grave.

2 feet 6 inches apart. The second stone on the south side is a narrow pillar 5 feet 3 inches tall and 1 foot 11 inches broad.

The second compartment is bounded by two stones placed parallel to one another the south member being 6 feet 2 inches long and 4 feet 3

inches deep, the north 5 feet 2 inches long and 3 feet 2 inches deep. The latter is not firmly wedged by the transverse stones, as is usually the case, and it showed signs of falling in after the chamber was dug out. This was avoided by a log set across, and we had a demonstration of the importance to the chamber walls of the transverse stones. The want of support was due, I believe, to the breaking away of the ends of the stone, which was a very friable flag of schistose slate.

The chamber contained as elsewhere many large stones, partly the debris of the upper part of the walls; but the building with small stones must have been employed here only to a very limited extent, as the tall side stones of the first compartment are higher than those of the portal.

The floor of each compartment was covered by a layer of black earth with charcoal, and on the floor were found a few fragments of burnt human bone, a molar tooth of a pig, and some fragments of ox bones.

No implements were recovered, but it is possible these may have been missed, because the day on which I excavated the chamber was one of drenching showers, and the riddling of the soil was impossible. A flake of flint, a block of Corriegills pitchstone, and a few fragments of black pottery were found on the floor.

IV. CAIRN AT GLECKNABAE. (*Craigjenew Tumulus*, fig. 14.)

This cairn is situated to the south-west of the farm of Glecknabae, on the west coast of the island, near the outlet of the Kyles of Bute. It is marked "tumulus" on the Ordnance Map. It stands in a field sloping down to the shore, and about 150 to 200 yards from the sea.

The cairn as it now appears is an elongated oval, about 60 feet long by 30 feet across, and about 4 feet high. It has been encroached on greatly by the plough, and the farmer informed me that he removed nearly a third of it on the south side some years ago. A line on the plan (fig. 15) indicates roughly what may have been the extent of the cairn before this removal was effected. The whole surface of the cairn

is covered with large stones in every position, most of which have been thrown on it from the field.

On examining the surface, I noticed that at the south-east corner a large flag stood on end; at the west corner another flag, partially exposed, lay horizontally, its edge just projecting beyond the face of the cairn where it had been quarried; while a few feet from the north edge, and 6 feet from the horizontal flag, there were seen the upper edges of two blocks of schist placed nearly parallel to one another, and



Fig. 14. View of Glecknabae Cairn from the west.

4 feet 6 inches apart. I commenced operations here, making a trench extending from between these two upright blocks and the horizontal flag, in the expectation that there would thereby be uncovered a chamber such as I am now familiar with. A foot of soil being removed, we defined two transverse stones, 3 feet apart. Taking these for the septal stones of a segmented structure, the trench was extended about 10 feet on either side, but nothing was revealed except the loose stones of the cairn, and when the horizontal flag was reached it proved to be the cover of a short cist.

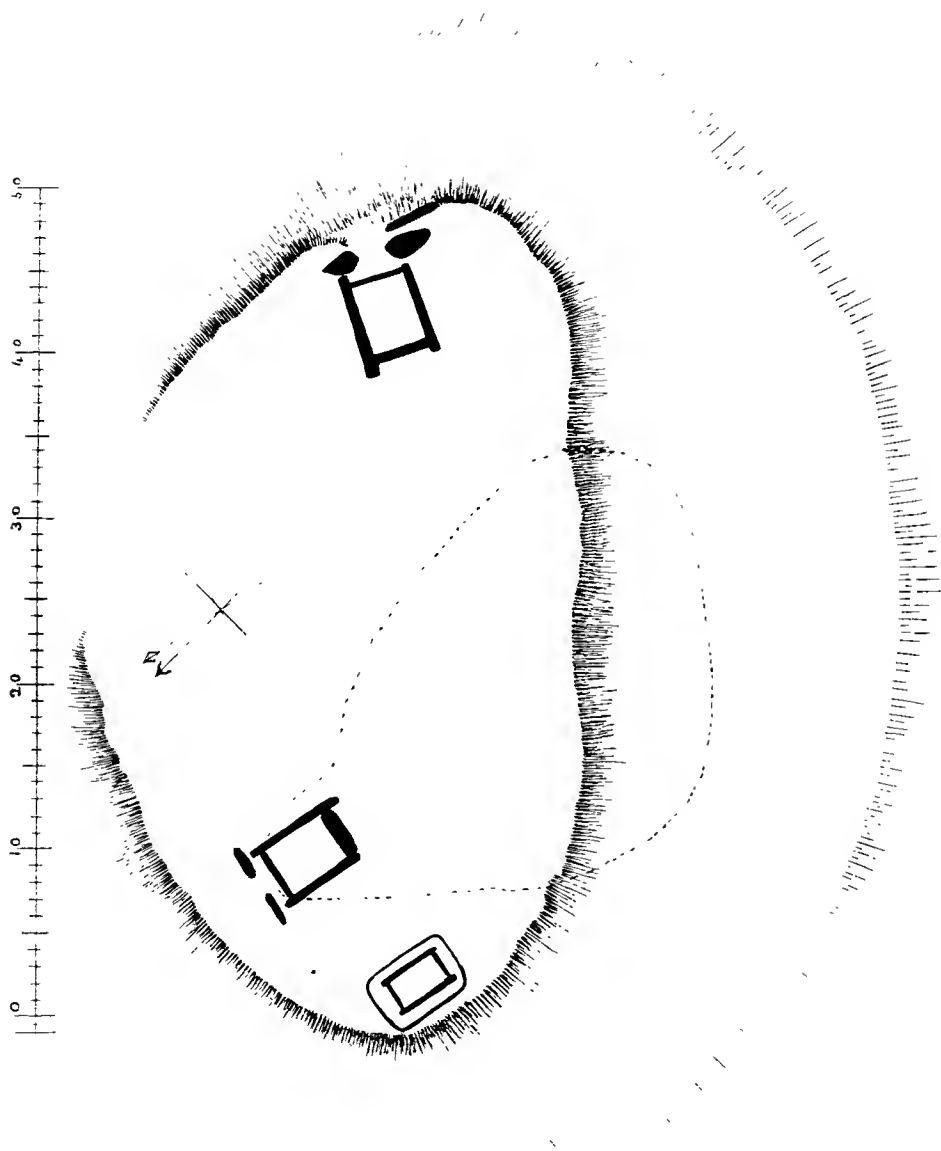


Fig. 15. Plan of Glecknabae Cairn.

I next extended the trench in the opposite axis, and finally laid bare the small chamber represented in the photograph (fig. 16) and plan (fig. 17). In the plan it has the appearance of a cist, but the photograph shows that the slabs are massive, irregular, and unequal in height. Moreover, the transverse stone D in the plan, not seen in the photograph, is 18 inches below the upper edge of G, 2 feet 3 inches below B, and 3 feet lower than A, the end stone of the chamber. Opposite each side stone of the chamber, and set at right angles to them, are two flags E and F, seen leaning inwards in the photograph, 2 feet 5 inches and 2 feet 2 inches broad respectively. Between these stones there is left a space of 2 feet 1 inch, which is the portal by which an access had been provided into the chamber, over the sill formed by the transverse stone D.

There is no sign of any capstone lying near, and no indication of how it, or they, had been supported. To the outside of the stone E, another block G further encroaches on the portal space, corresponding to a fourth H, outside F. Whereas E and G are on the same level, and flush with the top of the end stone A, the inner stone E is a foot lower than G, and H is a foot lower than F. The interval between G and H is reduced to 11 inches; and as they are light stones, one is tempted to suppose that they may have been flags which were used to block the portal after an interment.

The chamber itself is 4 feet in length and 3 feet in width, with its long axis lying due north and south (magnetic). The side stones are long flags of schistose rock, the east measuring 6 feet 8 inches long by 8 inches thick, the west 5 feet 3 inches long by 11 inches thick: B on the east side is 5 inches lower than C on the west. The end stone A is a massive block which looks almost as if it had been squared. It is 5 feet 1 inch high, 3 feet broad, and 1 foot 2 inches thick, and its upper edge is a little more than a foot above the side stones. The transverse stone D is 3 feet 5 inches broad, so that the chamber narrows slightly from the portal inwards, and the top of the stone is 18 inches above the floor. The depth of the chamber from the upper edges of the lateral stones is nearly 4 feet.



Fig. 16. View of small Chamber and short Cist at north-west corner Gleeknabae Cairn after excavation.

The chamber contained in its upper part a number of large stones, but its deeper part was mostly filled with dark earth containing pieces of charcoal. About 2 feet or 2 feet 6 inches down, a heap of *burnt* bones was found along the east wall; and a foot deeper, in the south-east corner, there was an *unburnt* interment, of which a few fragments of a much decomposed skeleton were recovered. On the floor were scattered

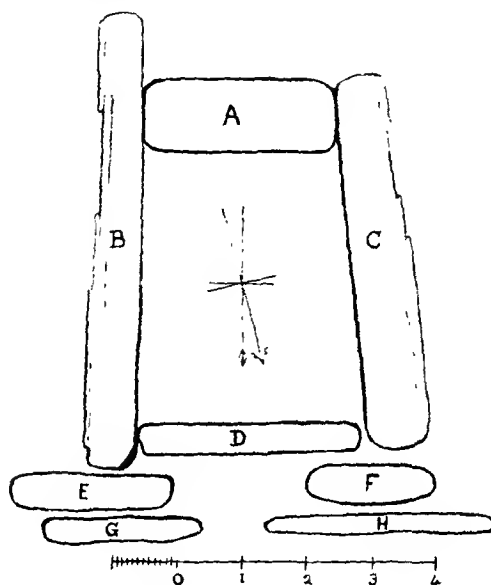


Fig. 17. Plan of small Chamber at north-west corner Gleeknae Cairn.

many fragments of reddish pottery, which I shall describe later. In the riddlings were recovered some flakes of flint, a flake of pitch-stone, and pieces of broken quartz.

When the bottom of the chamber had been reached, to my surprise the spade brought up quantities of shells of many varieties—whelks, limpets, clams, oysters, mixed with ash and charcoal, and fragments of ox bones. The shell layer was more than a foot deep, and extended underneath the stones of the chamber, which therefore, it appeared, had

been placed on the top of a refuse-heap or kitchen midden. To ascertain the relations of this layer of shells to the cairn, I deepened the trench beyond the end stone and carried it onwards to the edge of the cairn. It was then found that the cairn consisted of large and small stones, many of which were of quartz from the shore. At a depth of about 3 feet the stones ceased to occur, and the colour of the soil in which they were imbedded in the upper strata, changed from brown to black. This black layer covered a stratum of shells varying in thickness from 2 feet to 1 foot. In some places it thinned away to nothing, though the layer of black earth was present all through the trench below the cairn structure. The stratum of shells rested directly on the clay subsoil. Everywhere the refuse-heap showed the same varieties of shells, and fragments of the bones of the ox were also found, though very sparsely distributed. The shell layer extended about 16 feet beyond the present cairn to the south, *i.e.*, under the base of that part which was removed, and the manner in which it passed under the existing cairn left no room for doubt that part of the cairn covered the site of an earlier kitchen midden. The dotted line on the plan (fig. 15) indicates approximately the extent of the refuse-heap as ascertained by excavations in various parts of the cairn. On the south side I made trenches every few yards on each side of our main trench, until the layer of shells disappeared. At the north side it ceased before it reached the edge of the cairn, ending below the north side of the chamber. Its whole extent is thus about 35 feet north and south and 25 feet east and west, but it is not a layer of uniform thickness, for, though spread over that area, the shells occur in heaps of greater height here and there.

Mr Alexander Somerville, B.Sc., F.L.S., lately president of the Conchological Society, has been good enough to name the shells collected. There are six, all present day species.

Littorina littorea L.

Ostrea edulis L.

Pecten maximus L.

Patella vulgata L. type.

„ „ „ forma *depressa*.

Tectura testudinalis (Mull).

Trochus emarginatus L.

The mass of the deposit consisted of *Littorina*, the common periwinkle. The other species occurred sparingly, and are arranged in the list in order of frequency.

It is not pretended that this list is necessarily complete. I took specimens of all the species I saw, but others may have been present in other parts of the deposit. The absence of the mussel is to be noticed. I noted at the time that no shells of this species were observed in the trenches.

I must now return to the description of the chamber discovered in the south-west corner of the cairn. As mentioned above, a large flag rests on its end at the edge of the cairn at this spot. It is 5 feet 3 inches in its longer and 3 feet 3 inches in its shorter diameter, and is 3 inches to 7 inches thick.

I caused a trench to be sunk into the cairn from the edge adjoining the flag, and the digging revealed a chamber very similar to the one already described. The photograph (fig. 18) was taken from the outer side looking into the chamber. To the left is seen the flag which originally must have formed part of the roof; on each side are the two portal stones. The interval between their mesial edges is 2 feet. The right-hand stone is 2 feet 1 inch broad, is triangular in section (fig. 19) with the flat face directed outwards, and measures 1 foot thick at the base. The left stone stands lower than the right, and is seen (fig. 18) partially hidden by the flag in front. It measures 2 feet 6 inches broad, and 1 foot thick at the base of its bluntly triangular section. Between these upright stones is seen a transverse flag, the sill of the portal; but as shown in the plan (fig. 19), it lies nearly 2 feet behind their opposing edges. It is placed between the ends of the lateral stones of the chamber, stands 20 inches above its floor, while its upper edge is 2 feet 6 inches below the upper edges of the lateral stones.

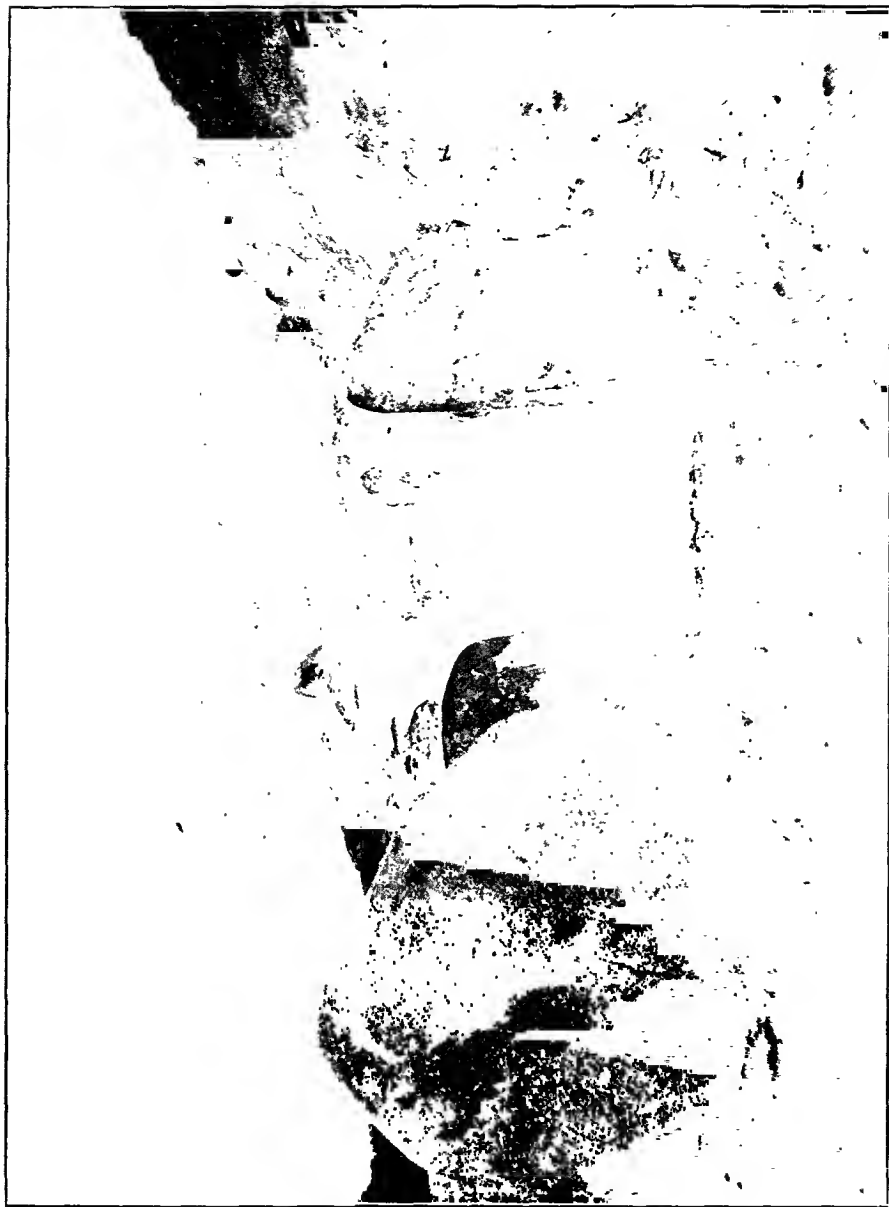


Fig. 18. View from the east of Portal Chamber No. 1, GleeKnabae Cairn.

The decorations consist of shallow groovings or flutings all round the periphery.



Fig. 20. Urn from Chamber No. 1, Glecknabae Cairn. (Scale, $\frac{1}{2}$.)

The larger urn (fig. 21) was unfortunately so broken that only a portion of the lip could be reconstructed. The paste is black and coarse, and the vessel must have been a massive one, with a mouth at least 10

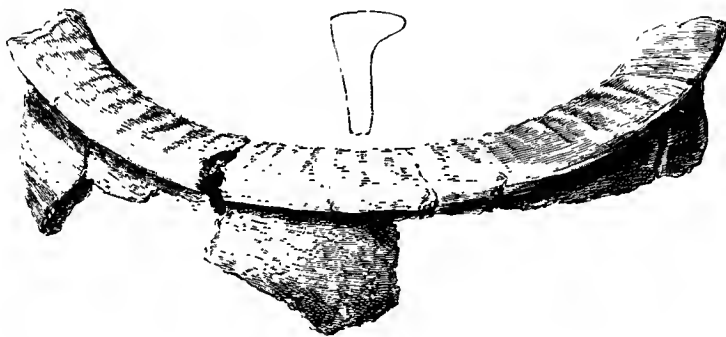


Fig. 21. Fragment of large Urn from Chamber No. 1, Glecknabae Cairn. (Scale, $\frac{1}{2}$.)

inches across. The flat projecting lip is $1\frac{1}{4}$ inches broad, and decorated with shallow groovings just like that of the smaller vessel. As among a large number of fragments no portion of a flat base was found, it is probable the bottom was rounded.

The flint implement (fig. 22) is a broad oval knife of brown flint nearly 2 inches wide.

The pottery from chamber No. 2 turned out to represent fragments of four vessels, all probably of the same general type. The paste was red



Fig. 22. Flint Implement from Chamber No. 1. Glecknabae Cairn. (Scale, $\frac{1}{4}$.)

in colour, and the walls considerably thinner than the vessels of dark paste found in the other chambers. The vessels, as indicated by fragments of the bases, were flat-bottomed, and, as fig. 23 will indicate, they

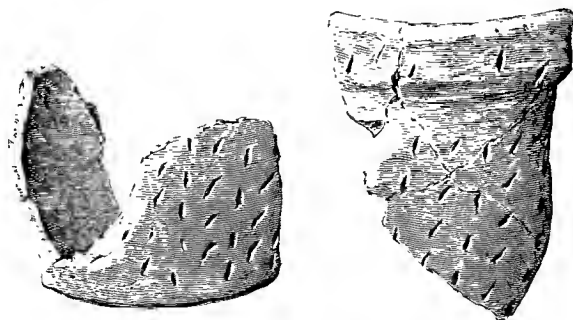


Fig. 23. Urn from chamber at north-west corner Glecknabae Cairn. (Scale, $\frac{1}{4}$.)

must have been tall in proportion to their width. Further, several fragments of the brim showed that they possessed thin lips distinctly everted. The base of the vessel represented in fig. 23 is $2\frac{3}{8}$ inches in diameter, and its total height must have been at least 6 inches. The body of the vessel bulges outwards, and is again constricted at the neck.

The decorative pattern must have covered the entire body. It consists of shallow incised lines, irregular both in size and direction, which, though arranged more or less in vertical lines, follow no definite scheme, and cannot be said to be disposed in zones. The fragment represented in fig. 24 has the same diameter of base—viz., $2\frac{3}{8}$ inches—as the last : but the decoration differs in being disposed in horizontal lines formed by discontinuous markings made by some square-toothed implement. The other fragments are portions of the flat bottoms of two vessels of brown and rougher clay, and have no ornament ; while in addition are several smaller fragments which do not seem to belong to any of these vessels.

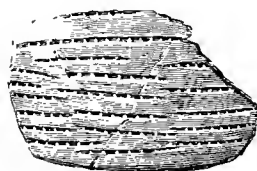


Fig. 24. Fragment of Urn from chamber at north-west corner of Gleknabæ Cairn. (Scale. $\frac{1}{4}$.)

The short cist seen in the photograph, fig. 16, lay in exactly the same axis as the Megalithic vault. No. 11., and 6 feet from it. The photograph was taken after the covering slab had been levered up and supported. It is a fairly heavy stone, and is roughly rectangular, measuring 5 feet 6 inches by 4 feet, and 7 inches thick. The cist (fig. 25) measures internally 3 feet 3 inches long by 2 feet 1 inch broad, its long axis lying due north and south (magnetic). The slabs of which it is built have been to some extent, I believe, smoothed, they are so much squarer and smoother than the rough slabs of the same stone forming the adjoining chamber. They are all on the same level, and the end stones are placed within the side members. It is about 2 feet deep, and was filled with fine earth, which was carefully removed and riddled. On the floor lay some much-softened and decomposed fragments of the long bones of an unburnt skeleton : but in spite of careful searching nothing else was recovered.

The contrast afforded by this short, carefully constructed, and completely closed cist to the two chambers is instructive; and the whole cairn, with its underlying shell-refuse layer, is a curious example of a site utilised successively in different phases of culture, and at different periods. But I have not exhausted the phenomena presented by the cairn without mentioning that the farmer, Mr Martin, a number of years ago, when removing a portion of the cairn, came on a vessel "like

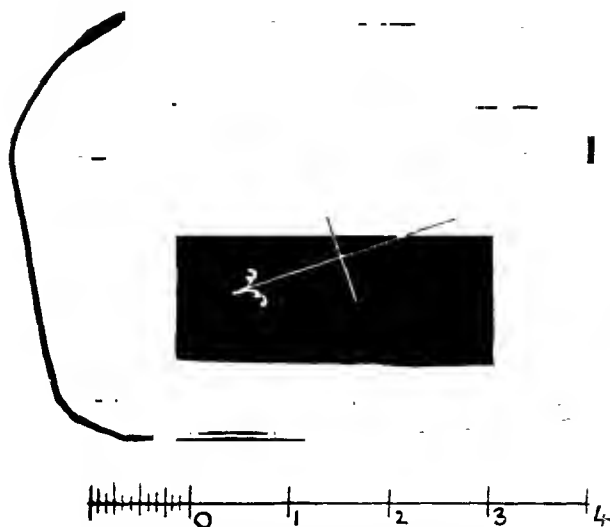


Fig. 25. Plan of Short Cist in Glecknabac Cairn.

a flower-pot" lying in the soil. It seems from his account that it was not provided with a protecting cist, but simply imbedded in the cairn, and unfortunately it is not quite clear what its relation was to the shell layer.

The only other structure of this class in Bute, I believe, is to be traced at the site of a cairn long ago removed, on the farm of Ballycurry on St Ninian's Bay. There is a "tumulus" marked on the 6-inch map, but

I cannot find any traces of it. In a fence, however, running over the site marked on the map, there are some large stones arranged in such a way that I was inclined to believe they represented the ruins of a chamber.

B. CAIRNS WITH SHORT CISTS.

I. SCALPSIE TUMULUS.

At Scalpsie Bay there are two cairns marked on the map. Near the shore there is an extensive area covered by a confused mass of stones,

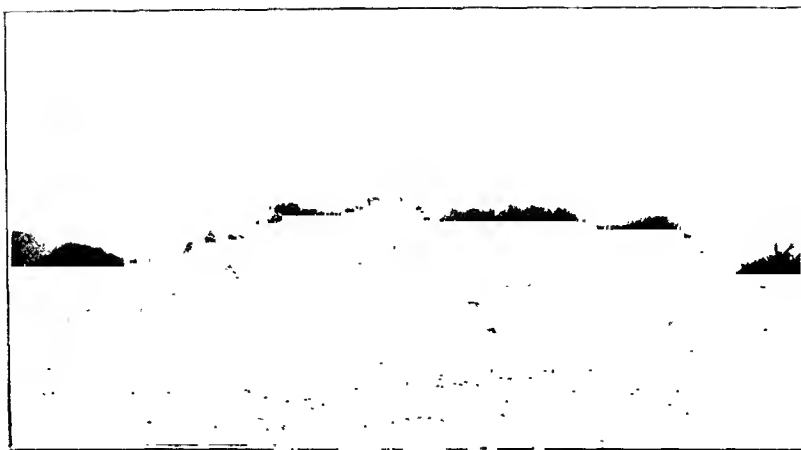


Fig. 26. Tumulus at Scalpsie Bay.

which is probably the site of some ancient buildings, for I was informed that an old mill once stood in the field. There is another heap of stones further inland towards Scalpsie farmhouse, which is undoubtedly a cairn, but it has been in great part removed. A cutting had been carried through its centre, and as a large flag, evidently a capstone, lay on the heap of stones, it was clear that the interment had been disturbed. I therefore turned my attention to a mound adjoining the road, marked "Tumulus" on the Ordnance Map. It is a low elevation between 4 and 5 feet high, covered with whin bushes (fig. 26). It is nearly circular—

45 feet in one diameter, 43 in the other, but its contour is not quite regular.

I first caused a trench (fig. 27) to be dug from the north-east side,

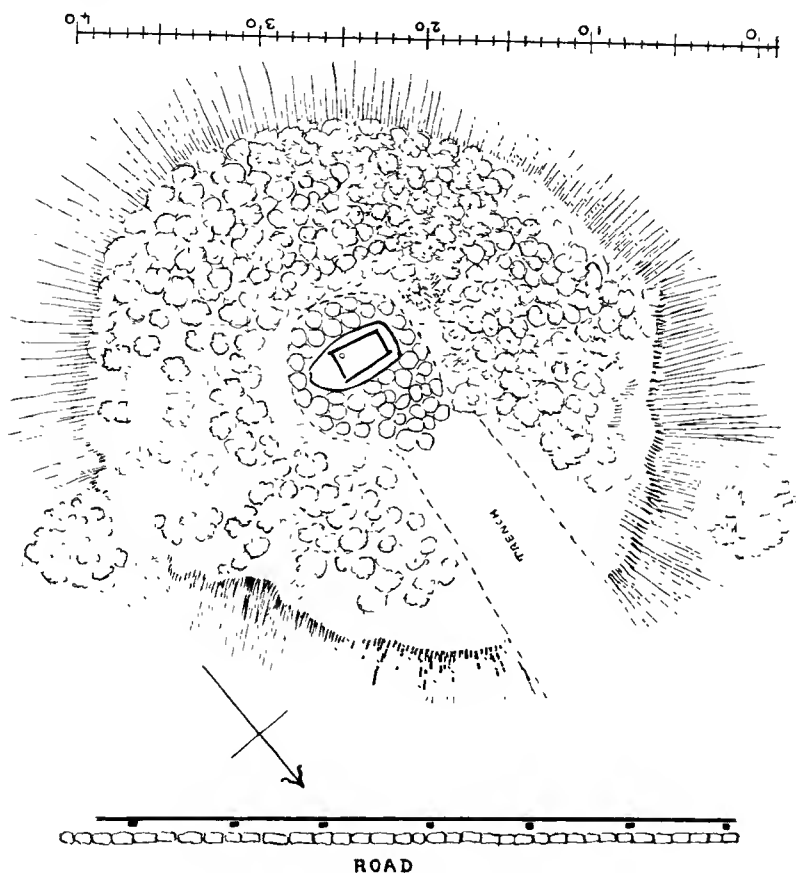


Fig. 27. Plan of Tumulus at Scalpsie Bay.

towards the centre of the mound. The outer portion consisted of earth with comparatively few stones, but these were of some size. When the centre of the tumulus was reached we ascertained that under the turf

and a layer of soil, there was a core of rather heavy boulders, which were so firmly welded that my labourers insisted that they had never been placed by human hands. On removing these stones a flat flag was reached, about 3 feet from the surface. When fully disclosed this was found to be a schistose slab, irregularly rectangular in shape, and measuring 5 feet 8 inches in length, 3 feet 4 inches in breadth, and 6 to 8 inches in thickness. This proved to be the cover of a cist (fig. 28), small relatively to the size of the capstone. It was care-

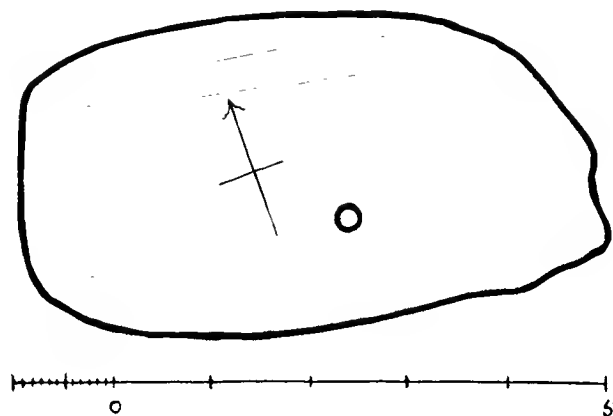


Fig. 28. Plan of Cist in Scalpsie Tumulus.

fully constructed of squared stones, and measured 2 feet 10½ inches in length and 18 inches in breadth. Its long axis lay west-north-west and east-south-east. The four component stones were all of equal thickness, and stood all on exactly the same level. The end stones were not of equal length, so that the cist narrowed slightly to the west-north-west end.

The cavity was filled to the third of its depth, which was 1 foot 10 inches, with fine sandy soil. This lay on a base of fine gravel and beach stuff.

In the south-west corner, just covered by the soil, and placed mouth

downwards, I found the food-vessel figured (fig. 29), which I was fortunately able to take out entire. Scattered on the floor were many fragments of *burnt* human bone; and in the riddling were recovered a bronze pin, a flint scraper and several fragments of the same substance, a number of broken pieces of quartz, and a jet bead.

The urn (fig. 29) lay mouth downwards. It belongs to the food-vessel class, is $5\frac{1}{2}$ inches in height, with a base $2\frac{3}{8}$ inches in diameter,



Fig. 29. Urn of food-vessel type
from Cist in Scalpsie Tumulus.
(Scale, $\frac{1}{2}$.)

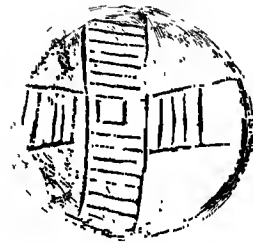


Fig. 30. Base of Urn of food-
vessel type from Cist in
Scalpsie Tumulus. (Scale, $\frac{1}{4}$.)

and an inlet $5\frac{3}{4}$ inches across. Round the shoulder there is a broad groove bridged over in each quadrant by a bar which is not perforated. The whole body is covered by zones of a chevron pattern, even the groove, edge, and upper surface of the broad bevelled lip being decorated in a similar way. On the body, neck, and lip a further ornament is added in the shape of a zigzag produced by small but deep triangular sinkings arranged alternately, and done with fair precision.

The flat bottom of the vessel is also decorated (fig. 30) by a square-armed cross, the limbs of which are formed of two bounding lines, joined

by a series of cross lines arranged parallel to one another. The centre is marked by a small rectangular figure.

The bronze pin (fig. 31) measures $\frac{3}{4}$ -inch in length, and is somewhat rectangular in section.



Fig. 31. Jet Bead and Bronze Pin from cist in Scalpsie Tumulus. (Full size.)

The bead (fig. 31) is of jet, and somewhat polished. It is $\frac{5}{8}$ -inch long, and oval in shape.

The flint implement (fig. 32) is a knife or scraper made of a greyish flint. It measures $2\frac{1}{8}$ inches by $1\frac{5}{16}$ inches.



Fig. 32. Knife or Scraper of Greyish Flint from Cist in Scalpsie Tumulus (Scale. $\frac{1}{2}$.)

It will be convenient to take here the other instances of short cist interments which I have examined, though there were no overground structures to mark the sites, and it remains a matter of speculation whether they were ever covered by cairns. I have three instances to record, and they are all situated on a long elevated ridge running east and west above the farmhouse of Auchantirie. The site has all been

cultivated, and in each case the cist was laid bare by the plough; therefore there is no improbability attaching to the supposition that they may at one time have been marked by a cairn or tumulus.

II. CIST NO. I.—AUCHANTIRIE (FIG. 33).

There is no sign of any cairn, and the covering slab is exposed on the

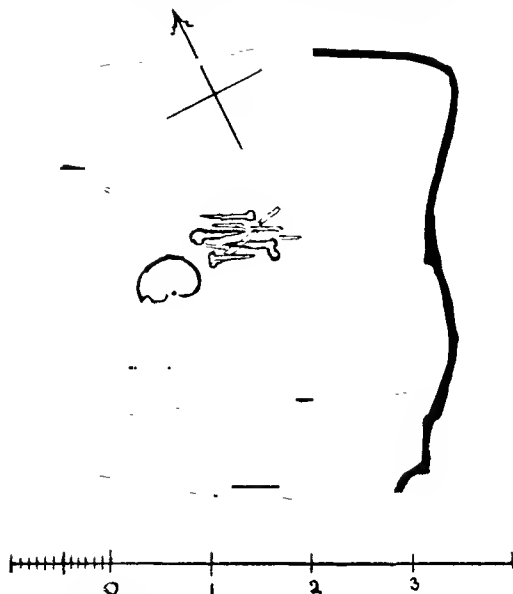


Fig. 33. Plan of Cist No. I. Auchantirie.

surface of the field. The cist was opened by the farmer many years ago, but the contents were not removed.

The covering stone is a heavy irregular slab of schistose rock measuring 4 feet 3 inches by 4 feet 2 inches, and is $7\frac{1}{2}$ inches thick.

The cist measures internally 2 feet 10 inches long by 1 foot 9 inches broad. The side stones are strictly parallel, and the end stones placed within them. The long axis lies west-north-west and east-south-east.

The depth of the cist is about 18 inches, and the bottom, to the depth

of 8 to 10 inches, was covered by fine soil. On this layer, lying as shown in the plan, was the left half of a skull, and in the soil were the fragments of some of the long bones. They all lay together as indicated; but it is evident that the disposition of the skeleton was interfered with when the cist was previously opened. The absence of the greater part of the right half of the skull shows that it had probably reposed on that side; and as the parietal and occipital bones are more broken away than the frontal, the head probably lay on its right side with the face slightly tilted up (*cf.* Mountstuart cist). In the riddlings of the soil I recovered a few fragments of an urn.

The skull (figs. 34, 35) is unfortunately defective, the greater part on one side where it lay on the ground being absent, while the base, face, and lower jaw have also disappeared. A small portion of the upper jaw, with some teeth, was, however, recovered separate from the skull itself. The skull is that of a female, in all probability, and is of small size, its maximum glabella-occipital length being only 170 mm. The individual to whom the skull belonged was beyond the middle term of life, as the sutures are in great measure obliterated, and the teeth are worn flat and the crowns considerably ground down.

The bones are light; the mastoid process, the glabella and superciliary ridges, and the occipital protuberance are all relatively slightly developed.

The forehead rises fairly vertically to the level of the frontal eminences, which are not prominently marked, and from this point to the occipital protuberance the vault is nearly uniformly rounded. The occipital region is somewhat globose; but this character is exaggerated in the photograph on account of the fact that the lambdoidal suture could not be so closely dovetailed as it naturally ought to be, when the occipital bone, which was separate, was placed in position. Notwithstanding, the posterior part of the skull does not fall away so rapidly as it does in a pronouncedly brachycephalous cranium. The occipital point is slightly above the inion. The parietal eminence is not prominent, and the side of the skull is well filled out and rounded below.

The skull is thus of a somewhat nondescript character—but as it is probably that of a female the features which characterise race are not emphasised.



Fig. 34. Skull from Auchantrine Cist No. I.



Fig. 35. Norma Verticalis of Skull from Auchantrine Cist No. I.

The following are such measurements as it is possible to take or ascertain. The transverse diameters are estimated by doubling the distance from the point in question to a carefully-placed artificial mesial

plane. Thus each figure is accurate on the supposition that the skull was strictly symmetrical.

Glabello-occipital length,	. . . . .	170 mm.
Ophryo-occipital length,	. . . . .	169 ..
Horizontal circumference,	. . . . .	492 ..
Minimum frontal diameter,	. . . . .	92 ..
Stephanic diameter,	. . . . .	112 .
Asterionic diameter,	. . . . .	112 ..
Greatest parieto-squamous breadth,	. . . . .	138 ..
<i>Cephalic Index</i>,	. . . . .	81
Frontal arc,	. . . . .	108 ..
Parietal arc,	. . . . .	126 ..
Occipital arc (lambda to inion only),	. . . . .	59 ..
Vertical transverse arc. (From auditory meatus to the vertex and figure doubled),	. . . . .	284 ..
Radii. (From point on post-meatal process of squamous below mastoid crest)		
<i>A</i> to nasion,	. . . . .	114 ..
<i>B</i> to glabella,	. . . . .	117 ..
<i>C</i> to opuryon,	. . . . .	122 ..
<i>D</i> to bregma,	. . . . .	124 ..
<i>E</i> to vertex = greatest vertical height,	. . . . .	124 ..
<i>F</i> to lambda,	. . . . .	107 ..
<i>G</i> to inion,	. . . . .	88 ..

The bones of the extremities preserved are too fragmentary to yield measurements of any value. They are the lower half of the left humerus: the upper portion of the shaft of the left femur, and the lower ends of both these bones: and portions of the upper ends of both tibiae.

All the bones are light and delicate, a further indication that the individual was a female, and all the epiphyses have fully united, showing that she was of full adult age.

The humerus is not perforated through the olecranon fossa. The head of the tibia is not reverted, and there are no signs of either marked platytenemia of that bone, or of platymery of the femur.

CIST NO. II.—AUCHANTIRIE (FIG. 36).

Several hundred yards east of the last cist described on the same elevated ridge, there are two cists lying 15 feet from one another with

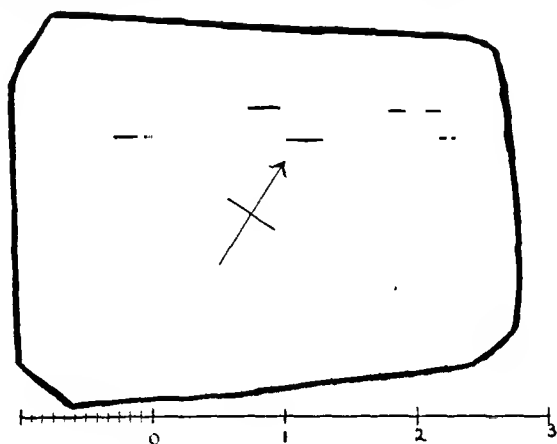


Fig. 36. Plan of Auchantirie Cist No. II

thin covering slabs just overlaid by a thin covering of turf. They are both small shallow cists compared with the last.

Cist No. II. (fig. 36) is covered by a slab 3 feet 9 inches long by 2 feet 11 inches broad, and quite light. The cist measures internally 2 feet $2\frac{1}{2}$ inches long by 14 inches broad, and 1 foot 5 inches deep. The slabs forming its walls are quite thin and light, one being only an inch thick. The end stones lie within the side stones which, are, however, not opposite one another. Its long axis lies east north-east and west-south-west.

The whole cavity was filled with burnt human bones, mixed with a little soil.

There was no urn, and the riddle caught nothing whatever in the way of implements or ornaments.

CIST No. III. (fig. 37).

The third cist lies 15 feet to the south-east of the last.

It is covered by a light somewhat oval flag, measuring 4 feet 3 inches by 2 feet 5 inches. The internal measurements are 2 feet 3 inches in length, 1 foot 6 inches in breadth, increasing to 1 foot 7½ inches at the

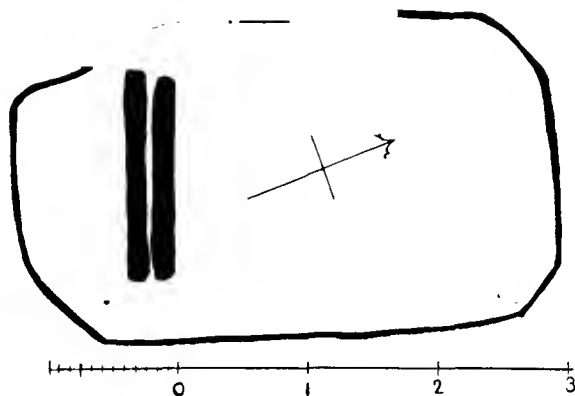


FIG. 37. Plan of Anchantuie Cist No. III

south-south-west end. The long axis lies south-south-west and north-north-east, so that it does not lie parallel to No. I.

The end stones lie within the side stones, and the south-south-west end is provided with two. All the flags are very light and shallow, and the depth of the cist is only 14 inches. The interior was filled with soil which contained the much broken remnants of the skull, and long bones of the unburnt skeleton of a child in its first dentition.

The skull is represented by fragments of the right frontal, parietal, occipital, and temporal bones.

The bones are very thin, showing very little diploic tissue. All the sutures are open.

As neither the maxilla nor mandible has been preserved, it is not possible to speak definitely as to the age from the dentition, although a number of milk-teeth crowns were found in the soil. In the absence of evidence from the teeth, it may be noticed that the frontal sinus is only in the earliest stages of excavation—which would point to the child having been somewhere between seven and eight years of age.

4. MOUNTSTUART CIST (FIG. 38).

Within the Mountstuart policies, a few yards from the west lodge, in March 1887, a cist was exposed containing an unburnt interment. Since this find is interesting and important, as a contrast to that which I opened at Scalpsie Bay, I may be permitted to repeat here such salient facts as are known about it. These are found in a letter from the late Marquess of Bute.¹

The surface presented some irregularities which Lord Bute always looked on as a natural hillock, but which he inclined after the discovery to think must have been the remains of a tumulus. Eighteen inches below the surface of this hillock, during the progress of some work, a slab of red conglomerate sandstone such as occurs on the sea-shore, about a quarter of a mile distant, was laid bare. It was 5 feet long by 3 feet 3 inches wide, and about 6 inches thick. It rested on six weather-worn flattish stones set on their ends—two at the head, two at the feet, and one on each side. The cist was oriented north and south, and was 4 feet 2 inches long by about 18 inches wide. The east stone had fallen in, and was therefore unsupported by the end stones—differing in this respect from the ordinary short cist. It was three-quarters full of sand and sea-pebbles: and lying on the floor formed of sand, pebbles, and gravel lay the fragments of a skeleton much decomposed. From the disposition of the parts Lord Bute justly concluded that the body had been placed in the doubled-up position, and on the right side. The skull, represented by the face and left side of the vault, lay turned towards the east and

¹ A letter to Dr Anderson, published in the *Glasgow Herald*, March 25th, 1887. Quoted here from *Bute in the Olden Time*, J. King Hewison.

tilted somewhat upwards, the right side, as is so frequent, having decomposed where it lay in contact with the soil. The remaining bones were in fragments on the floor; but the remnants of the thigh and shin bones lay close together, and end to end.

On the floor was found, under the upper part, some burnt stuff. Near the feet and near the head lay what seemed like the remains of pins or

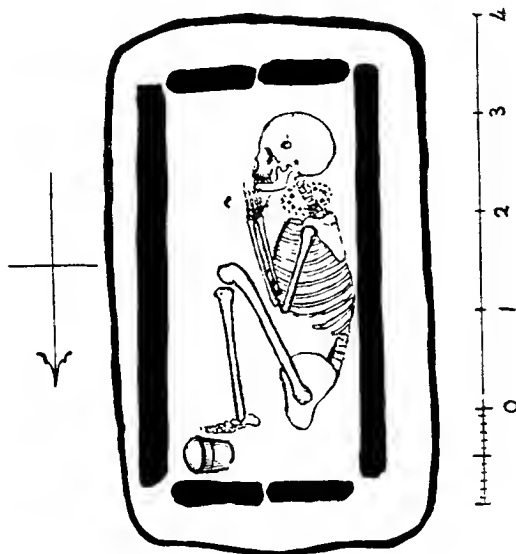


Fig. 33. Plan of Cist and reconstruction of the Skeleton in Cist at Mountstuart.

skewers. In the north-east corner was an urn lying on its side. In front of the chin, "where the hands had been," lay a "corrupt piece of bronze," and where the neck had been, 100 jet beads, which when put together formed the necklace figured on p. 66 (fig. 40).

The urn is of the usual food-vessel type, made of darkish red paste. It is 7 inches in height, with a base $2\frac{1}{2}$ inches in diameter and a mouth 7 inches across. The upper part is ornamented with horizontal bands of a chevrony pattern, like that on the urn from the cist at Brownhead, Arran, figured in my paper in the *Proceedings*, vol. xxxvi., p. 122.

The piece of bronze is so small as to be indeterminable, except that there is no doubt of its being bronze.

The necklace (fig. 40) is of the usual character of the necklaces, made of bugle-shaped beads and rhomboidal and triangular plates of jet with punctulated ornament. It consists of two terminal triangular plates and four intermediate rhomboidal plates with 98 beads and a triangular pendant.

The skull (fig. 41) has obtained some celebrity owing to the existence



Fig. 39. Urn from Cist at Mount-stuart, Bute. (Scale, $\frac{1}{2}$.)

of a perforation on the left frontal bone, which Dr Munro has attributed to trepanning.

Dr Beddoe, who examined the cranial fragments, came to the opinion that the owner was a young woman. The wisdom teeth have not appeared, but the other teeth are already slightly worn by the use of hard food. The mandible is rather small. The skull, indeed, must have been a small one altogether, but this cannot be attributed to mere youth, as the owner must have arrived at the age when the skull is pretty well grown.

Frontal diameter is 98 mm.—this is pretty good : Stepanic diameter
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(about) 115 mm., which is small. Whether the skull was brachy or dolichocephalic I cannot say, but I incline to think the former. There is

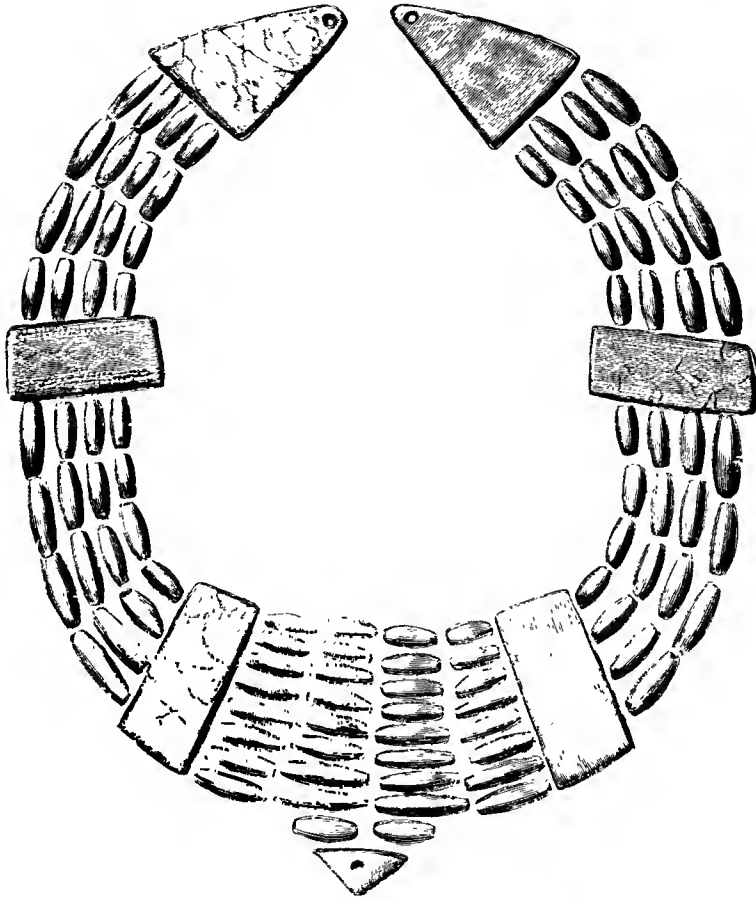


Fig. 49. Necklace of Jet Beads and Plates from Cist (with Urn, fig. 39) at Mountstuart. Bute.

a small degree of alveolar prognathism which is more usual (in Britain) with the former."¹

¹ *Proc. Soc. Antiq. Scot.* vol. n., series iii., p. 7.

I have very carefully re-examined the specimen, but cannot add anything further to Dr Beddoe's description. Comparing, however, the general characters of the fragment with the larger portion of the Auchantrie skull, I recognise a general resemblance which leaves no doubt in my mind that it belongs to the same class.

On the left frontal bone, behind and above its external angular process, with its upper edge touching the temporal crest, there is a shallow depression, roughly circular, measuring 27 mm. by 24 mm. It

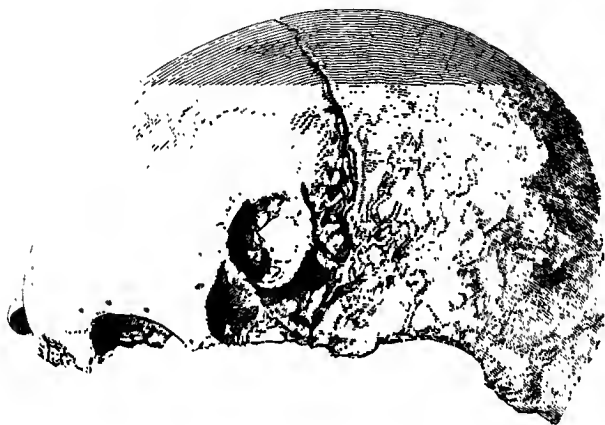


Fig. 41. Skull from Cist at Mount-stuart, Bute. (Scale, $\frac{1}{4}$.)

involves both the outer table and the diploe of the bone, and is bounded by an elevated lip formed by a heaping up of new bone round the fossa. At the lower and anterior angle this lip is undermined, elsewhere it passes gradually into the floor of the excavation. This floor is rough, and covered by minute foramina, and is further perforated by an irregularly rectangular opening, measuring 9.1 mm. in its longer by 6.9 mm. in its shorter axis. The edges of the perforation are sharp, are in no way rounded off, and are flush with the inner surface of the skull.

As I have said above, Dr Munro has advanced the theory that this opening was the result of a trepanning operation carried out during life.

If this be the case, the specimen is one of great interest, and no account of the prehistoric remains in Bate can pass it by without careful examination. The authority of so distinguished an archaeologist—himself a doctor of medicine—is a strong support of the suggestion; but my own analysis of the specimen, while it does not lead me to the conclusion that the perforation is necessarily an accidental breaking through of the floor of the fossa *post-mortem*, does not support the theory of trepanning.

Without committing myself to a categorical statement, I shall simply state the arguments against the theory:—

1st. The site is an improbable one for a prehistoric trepanning through sound bone in life, as it lay under cover of the thick temporal muscle.

2nd. The elevated lip of the fossa is undoubtedly to be referred to deposit of new bone in the course of a vital process. The uneven surface of the floor, and of the undermined portion of the lip, has all the appearance of a bony surface, which was, during life, covered by granulation tissue. The fossa thus shows evidence of a prolonged pathological process occurring during the life of the individual; and it undoubtedly was a necrosis of the bone, not improbably the result of a wound or blow.

3rd. The perforation of the floor of the fossa shows, on the other hand, no evidence of a vital process. The edge is quite sharp, and not rounded off as one would expect if the hole were made by an instrument, and the individual had survived the operation for a time.

4th. Two explanations suggest themselves which equally well, to my mind better, accord with the appearances than that of trepanning:—

(1st.) While the edge is not such as would probably result from an operative opening, certain specimens of perforation by necrosis I have examined, indicate that it may have been left thus by the necrotic process attacking the inner table of the skull.

(2nd.) The pathological process having eaten away the whole thickness of the diploe, so as to expose the inner table at the bottom of the depression, the thin papery shell of compact bone left was broken out after the maceration of the skeleton. Every other portion of such bone in the skull was broken when it was found.

This cist at Mountstuart is, so far as I know, the only instance of a short cist interment in Bute which has been adequately described, and from which the relics have been preserved. I have examined every known site in the island, except the circles, so that, until some accidental circumstance reveals a new site, I have exhausted the available data regarding this class of structure.

A considerable number of sites ¹ of prehistoric sepulture are, however, referred to in the small available literature ; of these Dr J. King Hewison ² gives a complete list, and I shall briefly refer to them.

John Blain ³ in his Manuscript, now published in book form, refers to three "barrows" which were removed in the end of the 18th century to the south of Mountstuart, at Kerrylamont. In a manuscript History of Bute, by a teacher named Macconachie, referred to by Dr Hewison, it is recorded that at Bruchag, the next farm to Kerrylamont, in 1817, the farmer found an ornamented urn with burnt bones during the removal of a tumulus.

Urn apparently deposited in the soil have been found also at Scalpsie, at Straad, at Nether Ardrosedale, and on a hill above the farm of Windyhall, near Rothesay. The latter discovery was made about twenty-five years ago, when several urns were dug out, until the proceedings were stopped by the late Marquess of Bute. I visited this site, which has been ploughed this year for the first time probably since the date of the discovery ; but nothing now remains to show the character of the interment. The farmer informs me that he found nothing, and I could see no cist covers appearing anywhere on the hill.

Blain mentions that a cairn with a cist containing an urn and burnt bones was removed from a field near Brechoch, and that in the same field there were several small cairns containing bones but no urns. He also refers to "barrows" at Craighiorach and Upper Barone Farms near

¹ Marked with a X in the outline map.

² *Bute in the Olden Time*, vol. i., p. 38

³ For account of Blain see *History of the County of Bute*, by J. Eaton Reid, 1864, Preface, p. 2

Loch Greenan. He further describes several "graves" in the hollow under Dunagoil, which he caused to be opened under the superintendence of Mr John Norton, the chief gardener at Mountstuart. He obtained undoubted evidence, in the shape of bones, that they were places of sepulture, but he does not say what manner of graves they were.

On Stravannan Farm, near Kingarth Church, a tumulus is marked on the six-inch map which has now disappeared. I have gone over the ground more than once without being successful in finding traces of it. Dr Hewison informs me that a number of years ago a landslip in the valley of the burn here revealed an ancient grave, now removed.

At Rudhabodach, on the north-east point of the island, there is exposed on the surface the cover of a cist which was opened many years ago. A skull was found, which Dr Hewison ascertained was sent to Professor Huxley.

Remains of a cairn are still to be seen on the Point House Burn above Ardbeg. It is referred to by Blain, and in the *New Statistical Account*, Buteshire, vol. v., p. 104, it is stated in a note that it had been partially opened, and "was found to contain many human bones mixed with the stones."

Dr Hewison¹ gives the following account of the cairn:—"Above Ardbeg Point there lies a little farm, now designated Rulicheddan, but a century ago noted in Dr Maclea's (parish) Visiting Book as Reillegadlain, which signifies the burial-place of Eadan. . . . On part of the farm, close to the highway, where Eilyer Cottage now stands, on a mound beside the Point House Burn, there existed till about twenty-five years ago an immense cairn, some twenty feet high, which was only a portion of a larger cairn which was used as a convenient quarry. . . . In 1858, when the stones were being removed, it was discovered to be a place of prehistoric burial, and eighteen cists, each about 30 inches square, containing in some cases black dust, in others sepulchral urns, were laid bare round the circumference of the cairn.

"Again, at the final removal to obtain material to build the dykes

¹ *Bute in the Olden Time*, vol. i., p. 163.

round Kames Bay, a cist, now built into the wall at Kames Castle Gate, was found in the centre of the cairn. The cist was about 30 inches square, and contained dark, apparently burnt ashes, together with a rudely ornamented urn, which on being handled, broke into fragments."

Class C.

Tumulus containing a burnt interment without a cist.

Above the farmhouse of Kerryerusoch, which is situated near the

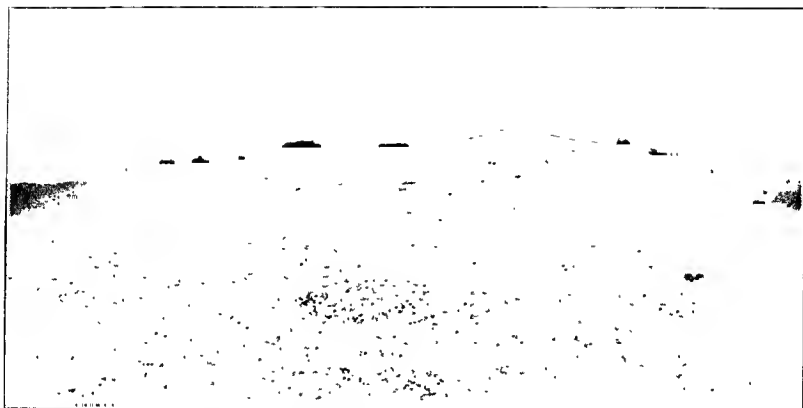


Fig. 42. View of Mound on hill above Kerryerusoch from the south-east.

south end of Loch Ascog, there is an elevation marked "Mound" on the Ordnance Maps.

It stands (fig. 42) on the open moor, its highest point commanding a wide prospect. Itself covered with smooth close turf, it projects 5 or 6 feet above the heather which surrounds it on every side. It is nearly circular, measuring 44 feet east and west by 38 north and south. No record or tradition exists regarding its ever having been opened, but a depression on the top excited a suspicion that I had been forestalled.

I first caused the turf to be removed over the summit of the mound,

when there was revealed a small central cairn about 6 feet in diameter. The superficial portion of this was formed of small white quartz stones, water worn, the deeper of larger boulder stones. At a depth of 2 feet, under the centre of the heap of stones, a mass of burnt human bones, mixed with charcoal, was laid bare, lying on a layer of black soil. There was no urn, and no relics of any kind were discovered, in spite of careful riddling.

Having removed the whole heap of stones without coming on anything further I sunk the excavation down to the undisturbed subsoil. This was here on a considerably higher level than over the general surface of the moor. The trench was now extended in both directions until the greater part of the mound was cut through; and it was then clearly seen that it was in great part a natural hillock, on the summit of which the interment had been placed. Over this in turn there was heaped the small cairn to mark the site; and this in process of time was itself hidden by a layer of soil and a covering of turf.

While I have referred to this as an example of an interment without a cist, I do not venture to say that it was not originally one with a cinerary urn, because the possibility occurred to my mind, in view of the signs of disturbance of the surface, that some previous explorer might have removed the urn, and left the deposit of burnt bones *in situ*.

MOUNDS OF DOUBTFUL NATURE.

I. ARDROSCADALE MOUND (FIG. 43)

Close to the farm of Upper Ardriscadale, and overlooking Etterick Bay on the south, there is a mound about 40 feet in diameter and 4 feet high, which is named "Watch Hill" on the Ordnance Maps.

Many years ago, the farmer, moved by curiosity, dug into the heart of the hillock and found, under circumstances which I cannot now recover, some implement of what is said to have been bronze, and like a "sword blade." This has unfortunately disappeared. The mound is now

a rabbit-warren ; and during this summer, at the mouth of one of the holes, evidently scraped out from its interior, there was picked up what was described to me as a metal buckle, green in colour. Left on view in the farm parlour, this too has disappeared.

I caused the mound to be trenched right across the centre in the hopes of discovering something to throw light on these finds ; but absolutely nothing was exposed. The mound consists of clayey soil with a few large stones, but there is no cairn core as at Kerrycrusoch ; and I saw neither

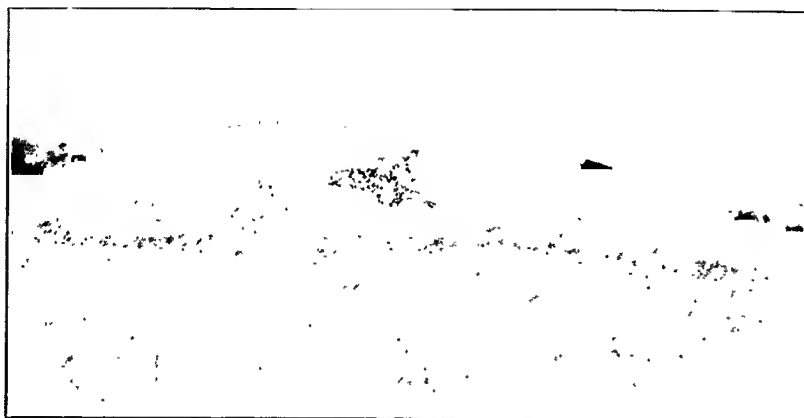


Fig. 43. View of Mound at Upper Ardrosedale from the south

charcoal nor signs of burnt material. I then carried trenches at right angles to the first, out to the other extremities of the mound, but they brought nothing to light.

The hopelessly spoiled record of what would have been a most interesting group of phenomena leaves one unable to say whether the mound is a tumulus or not : only one thing is certain, that it never contained a short cist. It is not impossible that there were fragments of an urn found on the first opening ; and it is quite conceivable that an untrained explorer would fail to observe such a deposit of burnt bones as was found in the Kerrycrusoch mound.

II. TUMULI AT KERRYTONLIA.

Below the farmhouse of Kerrytonlia, quite close to the beach, off the northern point of Kilchattan Bay, there are twin green mounds—designated as tumuli on the Ordnance Map. Blain refers to them in his *History*, and mentions that a third mound in the same neighbourhood, when opened, yielded implements of bronze.

One of the existing mounds was opened a number of years ago, as recorded by Dr Hewison, but nothing was discovered. In the absence of any definite signs to show which of the pair had been explored I trenched both. They are placed 84 feet apart. Each is a circular mound of very nearly the same dimensions—the eastern one measuring 44 feet by 42, the western 45 feet by 42. The former is, however, considerably higher, standing nearly 6 feet above the general surface: while the latter is only some 3 feet high.

Both mounds are formed of beach stuff covered by a layer of soil, and each has in its heart a cairn of stones.

In the higher mound the mass of stones was about 14 feet across, and the stones were large irregular blocks mostly of sandstone, loosely piled together. The intervening material was beach sand, consisting mostly of shells in minute fragments: but there were also many larger fragments, and numbers of entire shells—whelks, cockles, limpets, and clams.

I cut into this central core, turned out all the stones, dug below them down to the subjacent shingle of the old sea-beach, on which the mound stands, and then extended the excavation outwards some distance on every side through the sandy strata underlying the surface layer of soil: but absolutely nothing was revealed.

The lower western mound presented quite similar appearances: but as it was, I believe, the undisturbed member of the pair, I have more confidence that my observations record the original features.

I carried a trench 4 feet wide inwards towards the central point of the mound from the south edge. For the first 12 feet, it was formed of

a layer of soil resting on a layer of beach sand, then a mass of large stones loosely piled was met with. They were mostly irregular slabs of sandstone from the cliffs of the 25 foot beach, some 200 yards inland, or conglomerate from the beach. There was no sign of any arrangement; but they had been quite obviously piled artificially. The mass of stones did not occupy the exact centre of the mound, being nearer the south and east edges. It was smaller than that in the neighbouring hillock, being 10 feet in diameter. It extended downwards to a depth of 2 feet 6 inches from the surface. The interstices between the stones were filled with beach sand, and beneath them there was a stratum of loose beach stuff, about 18 inches thick, this again resting on the coarse shingle of the old beach. This layer of beach sand contained many fragments of shells, as well as whole shells water-washed.

I removed the whole central area of stones, and found, at a depth of 3 feet from the surface, a thin stratum of charcoal at one point. It was nearly in the centre of the mound, but not under the centre of the heap of stones, and it was very limited, extending 18 inches at most, and not more than 1 inch thick at any part.

There were no burnt bones found in this charcoal bed, nor in any part of the excavation; and no pottery or implements were seen. The nature of these mounds is thus quite doubtful, though the disposition of the central mass of stones, and the fact of finding a layer of burnt wood so deep as 3 feet from the surface, show that they have been raised artificially. It seems to me unlikely that they are sepulchral; but it is difficult to see how they could be sites of habitation. They are not kitchen middens for the disposition of the shells, and the appearance of them is quite different from the undoubted heap of that nature at Glecknabae.

ANALYSIS OF DATA YIELDED BY EXPLORATIONS.

If the three mounds of uncertain nature, last described, be omitted from consideration, the record I have submitted in this paper presents,

as might have been expected, a set of circumstances in almost all respects similar to these observed in the neighbouring island of Arran.

There is evidence of two markedly different cultural phases superimposed on one another. As in Arran, the earlier phase is represented by the chambered cairns, the later by the short cist interments.

In Bute, however, we have in the Glecknabae cairn a set of phenomena which corresponds with nothing observed in Arran, for in the kitchen midden we must recognise an earlier phase than anything met with in that island, while in the modified chambers there is reason for believing that there is represented a phase which may be termed transitional.

Taking the refuse-heap first, it is to be noticed that it rested on an old surface, and was itself covered by a superficial layer of soil which intervened between it and the stones of the cairn. The question arises, was the cairn built at a time when the refuse-heap was already hidden by a layer of soil and a covering of turf? The probabilities are in favour of an affirmative answer, and therefore the midden may reasonably be referred to an earlier date than the cairn.

Coming now to the chambers, it will be noticed that they differ from the typical structures within the field of my personal observation, yet, notwithstanding the structural differences, the essential idea is the same. They are chambers provided with a portal of entrance, indicating the custom of successive interments in one vault. Taking the cairn as a whole, however, there is no indication that it is a structure with a definite relationship to one or other of the chambers, nor that it formed with a chamber a monument expressive of a single structural idea.

The outline and general plan is no doubt gone beyond recall: but as both chambers must have been placed at the edge of the cairn from the first, their relative position indicates that it cannot have been a structure such as the great cairns associated with the larger segmented chambers.

The departure from the idea expressed in the larger chambered cairns might be only a local manifestation of the same phase of culture: but as we shall see later, the evidence provided by the deposit indicates

that the variation from the type has probably more than a casual significance.

Looking at the position of the chambered cairns, on the map, as compared with that of the short cists, it is to be noticed that they are placed only on the western side of the island. In an island of such narrow dimensions this may have no significance, but it is worth noting since this line of chambered cairns is the eastern limit of such structures in the Clyde basin.

A structure, the essential characters of which are exactly similar to the small chambers in Glecknabae Cairn, still stands at Ardnadam on the Holy Loch. It has two portal stones bounding the entrance, which stand nearly 6 feet above the ground, and are therefore more prominent features than those of the Glecknabae chambers.

When referring to the distribution of these chambered cairns, I may mention that, besides those recorded in this and my former papers, I have met with a much ruined example at Glenreisdale, a short distance inland from Skipness Bay, in Argyleshire; and that, from certain descriptions I have seen of structures which existed in the peninsula between the Kyles of Bute and Loch Fyne, I am certain they are to be found in that locality also.

Implements.—The structures in Bute have yielded very few implements as compared with the Arran examples; but such as have been found in no way alter conclusions based on earlier work. Nothing made of metal has yet appeared. The occurrence in the Bute chambers of the same greenish mineral which was found in the Arran chambers, and which was identified as Corriegills pitchstone, is a curious feature.

So far as I know, none of this rare mineral is found naturally in Bute, and in two of the chambers the pieces were undoubtedly chips or flakes broken artificially.

It may have been employed for making articles of personal ornament, or in the absence of an adequate supply of flint it may have taken its place in the manufacture of tools with cutting or scraping edges; but the fact that neither ornament nor implement has been found made of this

stone, combined with the fact that it occurs more frequently in the form of unchipped rough pieces, perhaps points to its having been regarded as an object of intrinsic value, but what significance underlies its occurrence in the chambers it is not possible to guess.

POTTERY.

The vessels put together from the fragments in which they were recovered form a valuable addition to our collection of chamber pottery.

Those with rounded bottoms are all types met with before, and the general character of the ornament when it occurs is the same as previously described. There is the shallow grooving seen on the lips of the two vessels from Glecknabae chamber No. I., and the pattern of dots and lines on the vessel from Bicker's Houses chamber. In the latter the ornament is in some respects different from anything yet observed. The dotted impressions which form the pattern are larger and more irregular, and made by a pointed, not a toothed implement. The curious device of decorating one-half of the circumference of the bowl by rows of dots, and the other half by vertical lines, is paralleled in the large vessel from Beacharr¹ in which the lip has a different pattern over each half of the circumference. This vessel in size and shape must have been the counterpart of the large thick-walled vessel from chamber No. I., at Glecknabae cairn, of which only the lip could be put together.

The small urn from Bicker's Houses chamber, though in shape similar to certain of the Arran and Beacharr urns, is the smallest vessel yet discovered. The lipped urn from the same chamber, and that with a lip from chamber No. I. in Glecknabae cairn, belong to the same class as the Largie and Achnacree urns, though the decoration in the second is confined to the lip, while in the Largie urn it covers the whole body of the vessel.

Glecknabae chamber No. I. thus corresponds in every respect in its deposit of pottery with the chambered cairns of Arran and Argyle; but chamber No. II. has yielded vessels of a type not hitherto found in any

¹ "Cairns of Arran," *Proc. Soc. Antiq. Scot.*, vol. xxxvi., p. 105.

chambered cairn in Scotland. In form the vessels correspond to the variety known as the drinking-cup or beaker type of urn. The ornament is, however, atypical. The largest fragments show only a series of vertical markings, not unlike the decoration on the "beaker" from Suffolk, No. 34, Plate XXVIII. of the Hon. John Abercromby's paper on this class of ceramic.¹

On the other fragments the design is more elaborate, and on one it is arranged in a somewhat irregular zonular manner.

The occurrence of the drinking-cup or beaker class of urn in a chamber identical with another in the same cairn which yielded typical chamber pottery, is of much interest and significance.

If we accept Mr Abercromby's conclusions that this class of ceramic was introduced at the end of the Neolithic period, and that the type named α is earlier than those designated as β and γ , we are obliged to conclude that the culture of the Stone Age persisted in the Western Islands for the whole period corresponding to type α in South Britain.

However this may be, the discovery of the beaker type of urn in one of these small chambers proves that they must have represented a terminal phase of the Stone culture in Scotland. They would seem therefore to provide a link between the Stone Age and Bronze Age of Scotland, or, perhaps better, between the chamber culture and the short cist culture, and to supply us with a working hypothesis for the classification of the structures assigned to the Stone Age in this part of the country.

SHORT CIST INTERMENTS.

The relics from the short cist interments are not numerous; but such as they are, they provide the same striking contrast to the earlier monuments as was seen in Arran.

Bute has been fairly rich in graves of this class; and considering that the island is so much cultivated, and that the relic-hunter has left his tracks, it is a matter for thankfulness that we have even two short cist inter-

¹ *Jour. Anthropological Institute*, vol. xxxii., Part ii.

ments with associated relics properly recorded. Out of the six short cist interments described in this paper, one was placed in a cairn or tumulus, one in a cairn of an earlier date, and the remaining four were placed beneath the surface with no overground structure to mark the site: of these, again, the Mountstuart cist probably was once covered by a tumulus, while the remaining three presented no features on which a surmise could be founded in regard to this point.

There are among those I have described or referred to, eight undoubted short cist graves, in which the mode of interment is certainly known. In six of these the body had been inhumed, in two it had been previously cremated.

The short cists in which inhumation was the mode of burial are distinctly larger, more capacious—with the exception of Auchantirie cist No. II. in which quite a young child was buried—than the cremation cists.

Of the six cists of which we have a complete description, three contained no furniture of relics; one contained only fragments of a decorated urn; the remaining two, the Mountstuart and Scalpsie cists, had urns and other objects, among which were articles of bronze.

The Scalpsie cist contained burnt bones, the Mountstuart an unburnt body in the contracted position: yet in the matter of relics there is nothing definitely to indicate that the different custom of burial belonged to a different phase or stage of the Bronze Age. Both contained objects of bronze, jet beads, and urns of the food-vessel type, differing from one another only in the detail of ornament; and further, the Scalpsie urn is practically identical with one found with an unburnt body at Glenkill in Arran.

Thus in that phase of the Bronze culture, when burial in short cists was the rule, the same diversity of custom in the form of the interment prevailed as in the Neolithic culture of the chambered cairn period.

In this connection it is worth noting that in one of the chambers in Craigenew cairn at Glecknabae, both customs had been adopted, as both burnt and unburnt bones were found, though at different levels.

HUMAN REMAINS.

Unfortunately the practice of cremation seems to have been the rule among the chamber-builders of Bute, so that the exploration of their graves throws no light on their physical characters, and I am unable to add any confirmatory evidence to that obtained from the examination of the osseous remains found in the Torlin and Clachaig chambers in Arran.

From the short cists, however, we have two fragmentary skulls; but as they are both female, the racial characters are not represented in a marked degree.

Both skulls are small and delicate. The Mountstuart specimen is too fragmentary to enable one to judge of the ratio between length and breadth, but the proportions of the Auchantirie skull can be estimated, and though the method adopted may admit of a degree of error, I believe I am justified in calculating the index above 80.

Thus the skull agrees with the two recovered in short cists in Arran, and the contrast in skull form between the chamber builders and the short cist builders in the Clyde islands is maintained.

II.

EXCAVATIONS MADE ON THE ESTATE OF MEIKLEOUR, PERTHSHIRE,
IN MAY 1903. BY THE HON. JOHN ABERCROMBY. *Secretary.*

(1.) *Excavation of the Black Hill Tumulus.*—At the east end of the parish of Caputh, Perthshire, on the property of Meikleour, there rises a small isolated hill, marked on the Ordnance Survey (Sheet lxiii., south-east) as Black Hill (Tumulus). The height is not given on the map, but I estimate it at between 30 and 40 feet. Its length is about 150 yards, and a spur to the south-east is about 50 yards long. The minister who wrote the account of the parish in the Old Statistical Account considered it artificial. This idea has been adopted by others, and is still not quite extinct. About thirty years ago the hill was planted with firs, which makes a complete exploration of its summit somewhat difficult. The top of the hill is rounded, and among the thickly planted trees and huge whin-bushes at the northern, tongue-like end of it, stands a small circular earthwork, not noted on the Ordnance Map.

With the kind permission of the Marquis of Lansdowne, the proprietor of Meikleour, I was able to make some excavations from the 4th to the 9th of May, both days inclusive.

Owing to the above-mentioned obstacles, I was never able while on the ground to find the exact centre of the work. Though on the plan I have drawn the crest of the ramparts as truly circular with a diameter of 41 feet, the base of the rampart is oval. On the ground, the best measurements I could get were 41 feet by 38 feet, so perhaps the perimeter of the crest of the rampart is also slightly oval. But the oval form of the base can be explained otherwise. The earthwork is constructed on sloping ground, so that the height of the rampart at the south end is only $2\frac{1}{2}$ feet, while at the north end it stands $8\frac{1}{2}$ feet above the berm, as near as I could estimate without levelling instruments. On this account its base is 9 feet or 10 feet wider than the base

at the south end. The north-eastern portion of the rampart is composed wholly of yellow sand, and this may have been thrown up at the extreme edge of the hill to give a little more room for the earthwork. The ditch only exists at the south end, where it separates the earthwork from the rest of the hill-top; then it gradually passes into a flat berm from 8 feet to 12 feet wide.

The rampart is best preserved on the north and south portions of the circumference; to the east and west it is nearly levelled and much burrowed into by rabbits.

The plan (fig. 1) shows the excavations that were made. They started from the point *a* at the south end, and had to take a devious direction to avoid trees. The rampart consisted of dark mould resting on hard gravel. About 7 feet from *a*, while sifting the earth previously thrown out, a small circular flint scraper, much chipped at the edges, and used perhaps as a strike-light, was discovered; about 15 feet from *a*, a small piece of iron and then a bit of bluish glass; at 17 feet from *a*, at a depth of $2\frac{1}{2}$ feet, a small piece of thin transparent glass with a slight angular off-set, like part of a cup; about 21 feet from *a*, a dozen small pieces of charcoal at a depth of about $1\frac{1}{2}$ feet.

At 24 feet from *a*, two or three thin flat slabs of freestone were discovered a few inches above the gravel floor. At first they suggested the cap-stone of a cist, or a drain or stone work of some kind. A short cut, 7 feet long, was therefore made to the eastward, but without finding any more stones, though one or two bits of burnt bone and of charcoal were picked up. As fifty-three small pieces of burnt bone were obtained by sifting the contents of the trench from *a* to the tree, and later on three or four more flat stones and some largish round stones—locally known as “land bools”—were found in the ditch, just south of *a*, it is not impossible that the builders of the earthwork had destroyed a cist, containing a burnt interment, in the course of their operations. These flat stones do not belong to the gravel, and must have been brought from a distance. Possibly the flint scraper belonged to this interment. Continuing the search for signs of a stone structure, a narrow trench,

afterwards enlarged, was made westwards, just south of the tree. At a depth of 20 inches a squarish freestone, 5 inches by $4\frac{3}{4}$ inches, was picked up. It has the appearance of being a mould, for on one face is a countersunk hole $1\frac{3}{8}$ inches in diameter and $\frac{1}{2}$ inch deep. The bottom surface of the hole is plain, and the whole workmanship is rude and inferior. In this small cutting two minute pieces of burnt bone were also brought to light.

In digging the north trench through the north of the rampart it was found that about 5 feet from the centre the gravel ceased, and only yellow sand existed below the upper layers of dark and paler mould, each about 1 foot deep. About 5 feet from the centre, in sifting the material thrown out of the trench, an iron nail was obtained. About $12\frac{1}{2}$ feet from the centre, and a little over 2 feet deep, an iron nail, $2\frac{3}{8}$ inches long, rather longer than the first, was taken out of the sand.

The square hole west of the centre, measuring 11 feet 3 inches by 8 feet 10 inches, was dug down to a depth of 4 feet 2 inches, the last half of it into hard, undisturbed, yellow gravel, mixed with sand, without finding anything.

In extending the cutting south of "tree" (fig. 1), at a distance of 3 feet from it and about 1 foot below the surface, an iron nail was extracted, quite close, but only 18 inches below the surface, a small piece of iron was found. Near this, but at a depth of 2 feet, and lying on the hard gravel, was a lump of charcoal. At 7 feet south of the tree and 15 inches below the surface was another iron nail with a large head and bent tail. In filling in the excavation a fragment of wavy glass was found close to the surface.

At *b* a hole was dug to a depth of 6 feet to see how the sand formed a junction with the gravel in a north-easterly direction. It was ascertained that the gravel sloped away eastwards at a sharp angle at its junction with the sand, where the latter came up to a level with the gravel in the central and southern parts of the area. This seems to show that the north-eastern portion of the earthwork is entirely artificial and covers more ground than the original top of the hill.

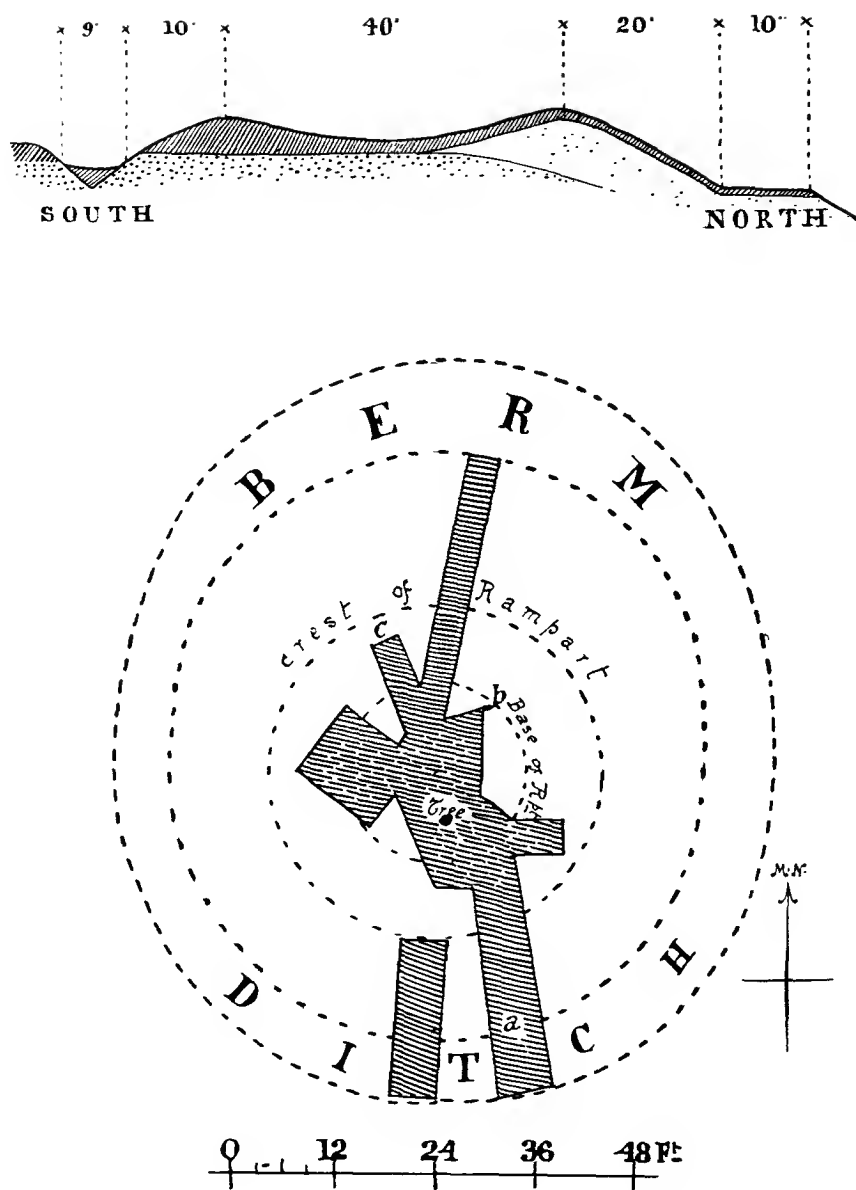


Fig. 1. Plan and Section of the Black Hill Tumulus, Meikleour.

In the trench that terminates at *c* the mould was only 10 inches deep, and overlay the apparently undisturbed gravel. There was no sand in this direction.

In the cutting west of *a*, across the ditch to the crest of the rampart, nothing was found but a few bits of charcoal, and in the ditch, at a depth of 8 inches, several pieces of an old tobacco-pipe.

In the ditch south of *a* the end of a bronze pin, $1\frac{1}{2}$ inches long, was found in riddling. It may be part of a fibula. At a depth of 2 inches, but further west, a minute fragment of transparent glass was found. At a depth of 3 feet was a little charcoal and fossilised resin. Just below this several largish, flat quarry stones and water-worn stones were encountered, but they seem to have been thrown in without any special intention. They may have formed part of the cist that seems to have been disturbed somewhere in the cutting to the north and south of *a*.

A trial pit 4 feet deep, made on the top of the hill, 21 feet from the south edge of the ditch, showed that its formation was just the same as at the centre of the earthwork. At the top there were 14 inches of soil, and then hard gravel mixed with sand.

The general date of this earthwork is afforded by the iron nails. It belongs to the Iron Age, and the time can be still further narrowed by the presence of the fragment of bluish glass. This closely resembles similar glass in the Museum from Roman camps and sites, and is itself most probably Roman. The portion of the bronze pin might also be assigned to the same time as the glass.

The flat space in the interior of the earthwork is very limited, having only an area of about 362 square feet or 19 feet square, and there is no water on the top. What was the object of constructing this diminutive enclosure, which, nevertheless, must have taken a good deal of labour? Certainly from the rampart a good and extended view of the country to the north, east, and west must have been obtainable before the trees were planted. Yet as a mere place of outlook a rampart seems unnecessary, and no site where signal fires had been lit was discovered.

In form the earthwork corresponds with Eugene O'Curry's definition of a *rath*: "The *rath* was a simple circular wall or enclosure of raised earth . . . in which stood the residence of the chief, and sometimes the dwellings of one or more officers or chief men of the tribe or court" (*Manners and Customs of the Ancient Irish*, iii. p. 3). The iron nails seem to point to a wooden structure, though the absence of pottery or of marks of cooking fires militates somewhat against the idea of permanent occupation. Perhaps the cooking was done outside. The absence of water is a matter of less moment, as the Isla flows at a distance of only about 450 yards. In Italy and Sicily I have often seen villages, perched upon the tops of high hills, where all the water has to be carried up daily by the women from wells at the bottom, a stiff climb of half an hour at the very least.

I conclude, therefore, that this small *rath* or earthwork was not intended for a fort to defend a particular point of ground, but rather for the fortified residence, perhaps of a temporary nature, of some small chief.

(2.) *Excavation of an Earthwork called the "Prætorium."*—The following week, from May 11 to May 16, was occupied in exploring a work (fig. 2) named "Prætorium" in the Ordnance Map, but locally known as "The Camp." It lies on the farm of Hall Hole at a distance of 1100 yards east of the Black Hill; it is 180 yards west of the Isla, and if the Cleaven Dike were prolonged its southern ditch would pass nearly 17 yards to the north of the northern angle of the "Prætorium." In the past it has hardly been noticed. It is ignored by the ministers that contributed to the Old and New Statistical Accounts, but Knox in 1831 (*Topography of the Valley of the Tay*) says:—"At the south-east end (of the Cleaven Dike), next the Isla, there is a square redoubt, generally supposed to have been a prætorium, but we rather think it a work constructed to strengthen the flank of the intrenchment. A small fort within (the Black Hill (Tumulus)) was more likely to have been the Prætorium." Chalmers (*Caledonia*, i. 175) considered it a Roman

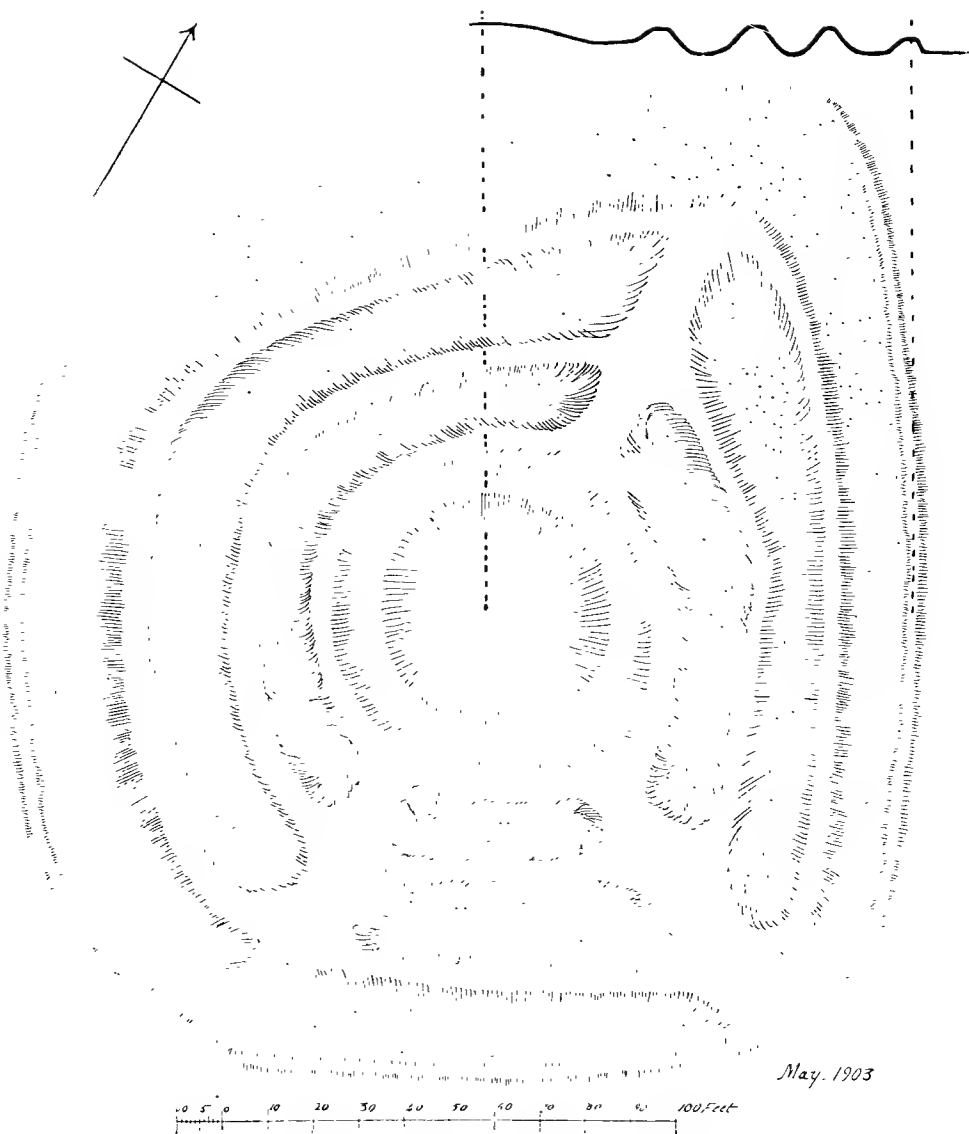


Fig. 2. Plan of the Earthwork called the Pretorium.

work, and so did Dr Skene (*Celtic Scotland*, i. 53), who speaks of it as a small Roman fort, and compares it with one of the camps at Ardoch.

The area on which the "camp" stands is now fenced in with an iron railing, and is dotted with about sixty well-grown Scotch firs, as well as with a few stumps of others that have fallen. In form the external rampart is roughly quadrilateral and quadrangular with rounded angles, and with the most acute angle directed to the north. Three of the faces are fairly straight, but the one to the south-west bulges outwards to a considerable extent. The next rampart has a similar trace, but the third is roughly pentagonal, while the inner one approximates to a circular form. At the centre there is a low circular mound, 48 feet in diameter and $2\frac{1}{2}$ feet high, which has the appearance of being sepulchral.

There are three well-marked roads from 10 feet to 12 feet wide leading to the centre of the work from the north, the south, and the south-east. There seemed to me to be slight indications that there was once an approach from the north-west, but Mr Ross will not admit this.

The extreme diagonal length between the north and south angle of the outer rampart is about 250 feet, and from the south-east to north-west angle about 225 feet. From centre to centre of opposite faces of the outer rampart measures about 207 feet and 200 feet. Although now there are four ramparts and only three ditches, there may have been originally an outer ditch, as the farmer informed me that the total area covered by the "camp" was once larger than what is now fenced in.

The exploration of the "camp" was begun by cutting a trench A B (fig. 3), 6 feet wide, across the central mound from the south-east. It was carried down to the hard undisturbed gravel, which was found at a depth of 20 inches below the natural surface. The finds were unimportant, and are best shown in the following table:—

Distance from A.	Depth.	Charcoal or Burnt Wood	Bone.	Pottery.	Glass.	Remarks
3'	10"	2	...	...	.
6' 3"	18"		2	.	...
10'	18"	1	1	1	.	Glazed.
11½'	2'	3	1	..	.	
12'	...	2	1	.	.	
14½'	2'	1	.	.	..	Several pieces.
16'	9"	..	...	.	1	White, transparent.
16¾'	18"	...	1	..	1	" "
17'. 18½'. 20'	1½'-2'	7	.	.	.	
21¼'	9"	...	.	1	...	Glazed, with yellow. white, and purple stripes.
24'	13"	..	...	.	2	Brown bottle-glass.
25'. 26½'. 27'	2½'	..	.	...	5	Brown bottle-glass.
34'	1'	.	...	...	...	River mussel shell.
35'	18"	.	1	.	.	
39'	18"	...	...	1	..	Coloured pottery: car- tridge case.
42'	18"	.	1	.	.	Minute.
45'	10"	.	...	1	.	White, glass-like china.
46'	6"	2	.	..	...
47'	12"	.	.	1	.	White, glazed.

As no indication of an interment had been encountered, the excavation at the centre was enlarged by digging a hole 12 feet by 4 feet to the north and south of it, making a total excavation at the centre of 14 feet by 12 feet. It was carried down through 2 feet of apparently untouched gravel to the undisturbed yellow sand below. A little more charcoal, two more bits of brown bottle-glass, a tin canister, and several fir-cones were disinterred, but there were no signs of an interment. The mound, and indeed the whole area of the "camp," is a regular rabbit-warren, burrowed and tunnelled through and through in every direction. This made it difficult to say for certain whether there ever had been a central interment that had afterwards been removed. If there ever had been one, it had not been enclosed in a cist, as no flat or other largish stones were met with. Some of the charred wood looked fairly recent, and like the glass, the sherds of glazed pottery, and the cartridge case, it might easily have been transported from the surface to the interior of

the mound by the constant passage of the rabbits scuttling into their holes. The mound was remarkably free from stones, and was so interpenetrated by grass roots from top to bottom as to leave the impression

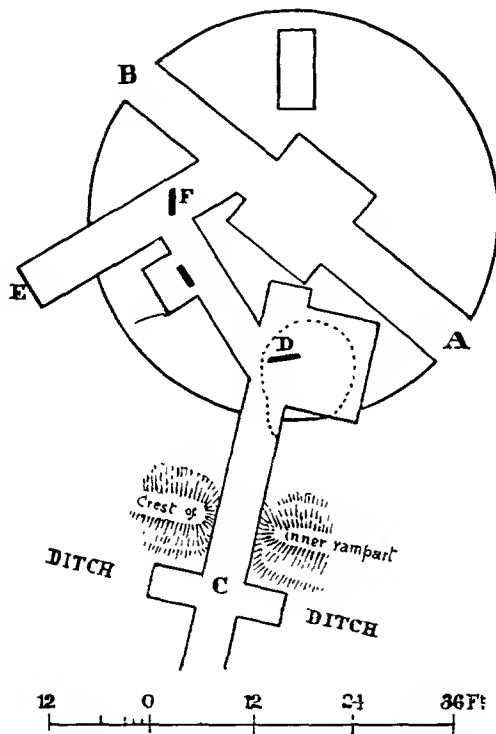


Fig. 3. Plan of the Excavations.

that it had been built of turf sods. The whole of the contents of the excavation A B was riddled with care.

The next operation was to obtain a profile of the entrenchments. A cutting 6 feet wide was made from A (fig. 3), first at an angle of 91° for the distance of 18 feet, and then at an angle of 80° so as to cut the ramparts at right angles. The present height of the three inner

ramparts is from 1 foot 7 inches to 1 foot 11 inches; the outer one is now only 1 foot 2 inches high. The distance from the crest of one rampart to another is 20 feet, except in the case of the outer rampart, which is only 15 feet apart from the third. The ditches seem to have silted up to the extent of about 3 feet, though it was hard to ascertain this fact exactly. Allowing the earth to stand at an angle of 45° , the original height of the ramparts above the natural surface was only 4 feet. These were composed of mould and gravel. Hardly anything was discovered in the course of the excavation. In the ditch nearest the

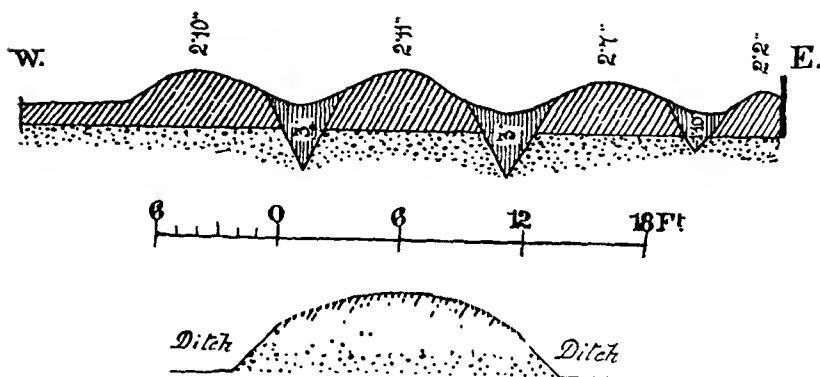


Fig. 4. Section of Ramparts and Section across south road. (The vertical scale given is double the horizontal scale.)

centre, at a depth of 9 inches, was a piece of river-mussel shell, and another piece was found 10 feet from the end of the trench. On the inner side of the second rampart, at a depth of 10 inches, was a bit of glass and another of charcoal. Though the contents of this trench were not riddled, it is not likely that any object of importance was missed.

The next operation was to cut a section $4\frac{1}{2}$ feet wide across the south road where it traverses the ditch between the second and third ramparts, and then to examine the road itself by means of a cutting towards the centre of the mound. The width of the road at its base is 16 feet, and

from 10 feet to 12 feet at the top. Its surface, after removing the turf and overlying mould, was found to consist of gravel mixed with earth. Though a few largish stones were observed, there was no pavement and no signs of tamping. The roadway had been formed by merely interrupting the course of the trenches. The cutting along the south road northwards from the point C (fig. 3) towards the centre of the mound was $4\frac{1}{2}$ feet wide and carried down to the hard gravel. At 18 feet from C, just at the base of the mound, a quantity of rounded, water-worn stones, forming a thin layer, were encountered in the eastern half of the trench, and these continued for a distance of 8 feet. At 27 feet from C a slab of highly fissile sandstone D, measuring 2 feet long by 10 inches wide and 2 inches thick, was seen set up on end athwart the cutting in a north-easterly direction. Four other thin slabs of irregular form, with a greatest length of from 1 foot 7 inches to 10 inches, and $\frac{1}{2}$ -inch thick, were set up on end in prolongation of the first slab. They were slightly embedded in the underlying gravel, and had the appearance of forming one side of a short cist. The excavation was enlarged $8\frac{1}{2}$ feet eastwards and 12 feet 10 inches southwards, to see if there really was a cist, and to trace the extent of the stony layer. This was found to thin out towards the south. Though the excavation was carried down $2\frac{1}{2}$ feet to the hard, undisturbed gravel, nothing was found to indicate that an interment had taken place, and I did not at the time recognise it as such. A cut was then made from the point E (fig. 3) in a north-easterly direction. Pebble stones were found just under the surface, beginning from the base of the mound, and continuing towards the top, but they were thinly spread and less numerous than in the last cutting. At a distance of 15 feet from the centre and 6 feet from the upper end of the cutting, at a depth of 1 foot, a largish freestone F was found standing on end in a position bearing nearly north-north-west and south-south-east. It measured 2 feet 3 inches by 18 inches, by 8 inches thick. At 2 feet south of this stone a handful or two of red, burnt earth and some charcoal were observed. In riddling the soil to the south of the stone about twenty fragments of burnt bones and charcoal, and a small

globule of vitrified matter, with a thorn-like process projecting from it, were brought to light. A large tree stump stood about a foot south of the stone at the west edge of the cut. When first planted it is possible that the interment had been disturbed, though I am not inclined to think so.

To complete the examination of the mound on the south-west side, a 5-feet trench was cut to connect the last cutting with the one along the south road. At a distance of 16 feet from the centre, the top of a sandstone slab G was found 1 foot below the surface. It measured 2 feet 9 inches by 1 foot 3 inches, and was $1\frac{1}{2}$ inches thick, and stood on end in a position bearing nearly north-west and south-east. A thin layer of water-worn pebbles lay all round the slab. In riddling, six pieces of burnt bone, a bone button (modern), and a small fossil marine shell were picked out.

It is quite evident, I think, that the mound contained three cinerary interments, though the mode of interment presents a novel feature. Cremated burials without any urn or cist are not infrequently met with, but here a single slab or a line of short slabs was set up on end, and the ashes were laid beside it, while the ground round it was strewn with pebbles. It is true that the quantity of bone and charcoal found with these interments was extremely small: in one instance none were observed, but this circumstance may reasonably be attributed to the dispersing agency of rabbits. The pieces of bone and charcoal discovered in the first cutting A B may easily have been brought from these interments though situated several feet apart.

The last excavation was a trial pit on the north-west side of the mound, measuring 8 feet by 4 feet by 3 feet deep. Nothing at all was found. Three or four large Scotch firs to the north and north-east prevented any excavations in these directions.

With regard to the so-called "Prætorium" or "Camp," several questions present themselves. (1) Was it Roman or native? (2) Was it intended for a fortified post? (3) Is the sepulchral mound coeval with the ramparts?

In answer to the first question it may be said that the work is native. The irregularity of the trace and the complete absence of any find of Roman origin leave no doubt on this point.

The second question cannot be answered so positively. The site in some respects is unfavourable for a fortified post. The free space at the centre of the earthwork is small, and the position has the disadvantage of lying in a shallow natural basin, so that to the north, the east, and the west the view is limited to a distance of about a quarter of a mile or less. Towards the south, the eye can range rather farther down the course of the Isla towards its junction with the Tay. On the other hand, it is protected to the north-east, east, south, and south-west by the Isla, which here forms a loop. To the east and north-east the river flows at a distance of from 170 to 190 yards; to the south and south-west at a distance of a little over 400 yards. And as the ground slopes gently from north to south, an enemy advancing from the south would have to attack slightly up-hill. But in the days when fighting was nearly all hand-to-hand, and the effective range of the bow was limited to about 100 yards, the protection afforded by the river is somewhat illusory, especially as it can be crossed in many places when the water is low in summer. The earthwork does not seem to stand in any relation to the Cleaven Dike, the object of which is still an enigma. If this was a defensive work, and extended, as is supposed, from the Isla to the Tay, its front lay to the north. If the existing portion of it were prolonged in the same direction so as to touch the Isla, the Cleaven Dike would pass a few yards to the north of the "Prætorium," which would therefore be in rear of it, and none of its faces would be parallel to that of the Cleaven Dike. It could never, therefore, have been erected as a fort to flank the dike.

The third question, whether the sepulchral mound is coeval with the ramparts, cannot be answered with certainty. A tumulus surrounded by a circular trench, and sometimes by an external rampart or earth-wall, formed by the spoil from the trench, is a recognised type of sepulchral barrow, especially in Wilts. But here there are four earth-walls and

three, perhaps four, ditches which do not conform to the circular shape of the enclosed mound. It is therefore possible, and perhaps probable, that the mound and the interments are later than the ramparts. The interments seem to belong to a late period, and the earthwork surrounding them would therefore be somewhat older, though, broadly speaking, contemporary. In that case, although, from insufficient examination of the whole site, no relics were discovered, it may be that the "Prætorium" was not a fortified post, but merely a fortified dwelling, afterwards turned into a place of burial. In Ireland interments have frequently been discovered in *raths*.

III.

EXCAVATION OF THREE LONG CISTS AT GLADHOUSE RESERVOIR, MIDLOTHIAN. BY THE HON. JOHN ABERCROMBY, *Secretary*.

In the month of June 1903, Mr George Forrest, Linden Cottage, Loanhead, brought some human bones to Dr Joseph Anderson at the Museum of National Antiquities. He reported that he had found them in a cist, the end of which projected from a bank on the edge of the Gladhouse Reservoir, and that there were two other cists beside it.

After obtaining permission from the Chairman of the Water Trust to make a closer investigation of the cists, a permission which was very readily granted, I proceeded on 23rd June with Mr Forrest to the reservoir.

The site where the cists were found lies on the south side of the reservoir, and consists of a slight eminence near the edge of the water. This small natural hillock has fallen in on the west side, and so presents a gravelly face running north and south. Its height may be about 15 feet above the ordinary level of the reservoir. Close to the summit Mr Forrest pointed out the ends of three stone cists, the westerly heads of which had been broken away.

We began operations by digging out Cist No. 1, which lay farthest to the south. The cover-stone lay about a foot below the surface of the

turf, and was directed 70° east of the magnetic north. Allowing 20° for the variation of the compass, the stone coffin was laid due east and west. Its greatest length on the top was 4 feet 7 inches, the west end having broken away. Its width, measured also on the outside, was 2 feet 1 inch, and its depth 10 inches. The cover-stones measured 1 foot 3 inches by 1 foot 1 inch, and 1 foot 5 inches by 1 foot 2 inches. The longest stone at the south side was 2 feet 9 inches by 9 inches by $4\frac{1}{2}$ inches thick, on the north side 1 foot 10 inches by 10 inches by 3 inches thick. The top stones seemed to have fallen in or to have been laid very irregularly and carelessly in the first instance. The skeleton was greatly decayed, but four ribs and the right arm were found in position, and seemed to show that the body had been laid on its back or a little on the left side. The cist was full of gravel, which was carefully riddled with a small-mesh riddle, but no relic of any kind was brought to light.

Cist No. 2 lay 5 feet 4 inches to the north of the last, measuring from centre to centre, and had the same direction. Its outside measurement was 6 feet by 2 feet 4 inches, and 1 foot 4 inches wide at the east end. The northern side was composed of four stones, 12 inches deep: on the south side there were three stones, and one closed the east end. The west end was open and truncated, and at this end the cover was broken in. The skeleton measured 1 foot 8 inches from the shoulder to the top of the thigh, and lay on its back, with the head to the west. The shoulder-blade, part of the left arm and thigh bone, and a portion of the pelvis were in position. The hands were stretched down, with the fingers behind the thigh. The bones of the two legs and ankles were about 5 inches apart. Though the skull was missing, three teeth were picked out of the contents of the cist.

Cist No. 3 lay between 4 feet and 5 feet to the north of No. 2. The length and breadth, measured on the outside, was 5 feet 3 inches by 1 foot 10 inches, and the west end had broken away. This cist was smaller and damper than the others, so that the skeleton, with the exception of a few pieces of bone, had completely disappeared. The ankle-bones found side by side at the east end showed that the body

had been laid on its back with the head to the west. The east end of the cist was so narrow that there was only sufficient room to receive the feet.

In no case was the bottom of the cist paved, and the body had been laid on the natural gravel. The cists seem to have been filled with gravel before laying on the cover-stones. Although the contents of the cists were carefully passed through a riddle with $\frac{1}{4}$ -inch mesh, nothing was found. In spite of the absence of any direct proof, there is reason to believe that interments of this description belong to a late period, possibly as late as the Christian period.

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 MONDAY, 11th January 1904.

ROBERT MUNRO, M.A., M.D., LL.D.,
 Vice-President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

EDMUND EUSTACE DYER, M.B., C.M., Mar Place House, Alloa.

SIR JAMES GUTHRIE, President of the Royal Scottish Academy, 41 Moray Place, Edinburgh.

MACKENZIE MACBRIDE, Editor of the *London Scotsman*, Lyndhurst, Chelsham Road, South Croydon.

JAMES WHITE, St Wimmer, Bearsden, Dunbartonshire.

The following Donations by bequest were exhibited .—

- (1) By the late Mr WILLIAM BOYD, M.A., F.S.A.Scot., 56 Palmerston Place, Edinburgh.

A Collection of Antiquities, 395 in number, chiefly from the Buchan district in Aberdeenshire, comprising :—

Stone Implements.—Seventeen Arrow-heads of flint, with barbs and stems, thirty leaf-shaped, and ten imperfectly finished or broken.

Forty Scrapers of flint, including five of large size, one circular, and one hollow scraper.

Seventy-seven Flakes of flint, about twenty of which show secondary working.

Thirteen flint Cores and one flint Disc, $2\frac{3}{4}$ inches in diameter, which was used as a charm against diseases of cattle in a byre in Skains.

One Fabricator of reddish-brown flint, $3\frac{3}{8}$ inches in length by 1 inch in greatest breadth.

Two knife-like Tools of flint, one very finely worked; and one flint Saw, 2 inches in length along the cutting face.

Twenty-one polished Stone Axes, of granite, greenstone, or clay-slate, varying from 3 inches to $11\frac{7}{8}$ inches in length.

Five Anvil-stones of granite or greenstone, and six Hammer-stones or Pounding-stones.

An oval Sink-stone of granite, $2\frac{3}{4}$ inches in length by $1\frac{3}{4}$ inches in breadth, with a groove round the middle.

A carved stone Ball of reddish granite, $3\frac{1}{4}$ inches in diameter, with six projecting discs; another of greenstone, $2\frac{3}{4}$ inches in diameter, with six projecting discs; and a third, also of greenstone, $2\frac{3}{4}$ inches in diameter, with six projecting discs, from Brae of Biffie.

Ball of reddish granitic sandstone, $2\frac{1}{2}$ inches in diameter, having a large spiral incised on its periphery. This example does not possess the usual characteristics of the typical varieties of these stone balls, the spiral resembling that on the bronze ball from Walton, Lanarkshire.

Two oval and seven circular Balls of different varieties of stone, with plain surfaces, varying from about 3 inches to 2 inches in diameter.

Seven perforated Discs of stone, some rather irregularly shaped, the perforations countersunk and placed nearly in the centre.

Eight stone Whorls, from 1 to $1\frac{1}{2}$ inches in diameter, more or less ornamented; eleven plain Whorls, from $2\frac{1}{4}$ to $1\frac{1}{4}$ inches in diameter, and one Whorl of clay, semi-globular, $1\frac{1}{8}$ inches in diameter.

Seven small flat Rings of stone, from half an inch to about an inch in diameter; half of a flat Ring of stone, $1\frac{1}{4}$ inches in diameter, and an un-perforated Disc of thin slaty stone, $1\frac{1}{4}$ inches in diameter.

Six Rubbing or Polishing Stones, two being oval oblong pebbles of greyish quartzite, $5\frac{1}{4}$ and $4\frac{1}{8}$ inches in length, each with a curved indentation at one end; one of greenstone, flattish, with rounded edges and ends, $5\frac{1}{4}$ inches in length by $1\frac{3}{8}$ inches in breadth; one of greyish quartzite, $4\frac{3}{4}$ inches in length by $1\frac{1}{4}$ inches in breadth, pointed at one end; one of brownish quartzite, rather wedge-shaped, 3 inches in length; and one of reddish quartzite, $2\frac{5}{8}$ inches in length, with the broad end rubbed flat.

Stone Mould of slaty stone, $4\frac{1}{4}$ inches in length by $3\frac{1}{2}$ inches in breadth, with moulds apparently for buttons on both sides: and a smaller stone Mould, also of slaty stone, $2\frac{1}{2}$ inches by $2\frac{1}{8}$ inches, having on one face an imperfect mould apparently for a button, and on the other side moulds for two rings, one within the other.

Lighting Appliances.—Three iron Crusies and Bottle of Whale-oil: one iron combined Candlestick and Rush-holder, on stand; one tinned-iron Tinder-box, with flint, steel, and tinder, and Candleholder on top; one triangular wooden Rush-holder; one small Peerman for fir candles, and bunch of Fir Candles, and Gully-knife for splitting fir candles; one large “Fleerish,” or steel strike-light.

Miscellaneous.—Nine pairs of old Spectacles; five pairs of Shoe-buckles of steel; small hank of two-ply hand-spun worsted Yarn, found in the Moss of Lochlindie, Slains: two Snuff-mulls of horn, with Snuff-spoon; one oval Tobacco-box, made of wooden staves, feathered and hooped; one Ale-cap, made of staves, with iron hoops; two horn Spoons, with whistles; one horn Tumbler; one double Egg-cup of turned wood; one Bread-spade of iron; one Bottle-stamp, “Hivergie”; one iron Hammer for marking the tails of dried fish: a silver-mounted Baton of a messenger-at-Arms: four old Almanacs: a Chap-book, Thomas the Rymer’s Prophecies: eighteen copper Trade Tokens, English, and ten Scottish.

Foreign.—One Patu-Patu, from New Zealand; one Quiver of skin, from the Niger; one Eskimo Bow of bone, in its case, with four Arrows; a small Arrow-head of slate, from Cumberland Gulf; four pieces of Pottery, from excavations at Polis, and twelve from Salamis, Cyprus.

(2) By the late Mr JOHN SHEDDEN DOBIE, F.S.A. Scot., of Morishill, Beith.

Manuscript in small folio, 172 pages, with Map and Drawings, entitled "Fragments of Perambulations in Kintyre in the Summer of 1833," by William Dobie, of Grangevale, Beith.

It is a neatly written account of the author's tour in Kintyre, containing many interesting descriptions and observations. Tombstones received much attention, their emblems and motives being described, and many inscriptions given in full, among which there are several in the Gaelic language. Old sculptured grave-slabs of the usual West Highland type and fragments of old Celtic crosses are also described, and in several cases he has taken much pains to give accurate drawings of them. He gives details of the condition of many old and ruined churches, and describes with much care and fulness the old castles of Saddel and Skipness. He also gives a drawing of the curious carved stone which still lies at the Well of St Kieran, in the entrance to St Kieran's Cave; speaks of the vitrified forts at Carradale and Dunskeig; refers to circular duns at Rannachan and Dunskeig; and describes a solid stone coffin at Kilchoulan. He saw a wattled partition-wall in a house at Southend; speaks of disused salt-pans at Machrihanish; tells of water from Barbreck's Well having been sent to Glasgow; and states that the Relief Seceders at Campbeltown bury their dead in a cemetery apart. The drawings in pen-and-ink and sketches in water-colour are eighteen in number, all very cleverly executed.

A volume entitled "Examination of the Claim of John Lindsay Crawford to the Title and Estates of Lindsay and Crawford," etc., 1851, by the late Mr James Dobie, Writer, Beith, in which are bound letters



received from many of the nobility and gentry with reference to the work and its subject-matter.

(3) By the late Mr G. H. M. THOMS, F.S.A. Scot., Sheriff of Caithness, Orkney, and Shetland.

Large brass Knocker, formerly belonging to the Office of the Northern Lighthouses.

The following Communications were read:—

I.

EXPLORATION OF CIRCULAR ENCLOSURES AND AN UNDERGROUND HOUSE NEAR DINNET, ON DEESIDE, ABERDEENSHIRE. BY THE HON. JOHN ABERCROMBY, *Secretary*.

On the narrow neck of land between Lochs Davan and Kinord—locally pronounced Da-wan and Kinner—and also on the slopes of Culblean Hill, there are several circular enclosures, circles of stones, alignments of stones and cairns, which were first noticed by the Rev. J. G. Michie, then minister of the parish. He believed they were the remains of the Pictish village of Devana, and dated from about the time of the Roman occupation of Britain.

Last year Professor Ogsten of Glen Davan called the attention of Dr Robert Munro, F.S.A. Scot., to these curious structures, which are supposed not to be found in other parts of Scotland, and they visited them together. It was Dr Munro's intention to excavate these enclosures himself this year, but as in spring he found this would be impossible, I offered to undertake the work, so that no time should be lost. In company with him and Dr Ogsten, I made a preliminary visit to Dinnet in the second week of July, and began operations on the 17th August 1903, which lasted for four weeks. All these structures are on the property of Mr Barclay Harvey of Dinnet House, who kindly granted permission for the excavations to take place.

A walk of about a mile and a half from Dinnet station, first northwards along the high road, and then sharp to the left towards the farm of New Kinnord, takes to the neck between the two lochs, which has the form of a low ridge or hog's back, sloping northwards and southwards. On the crest and south side of the ridge there is a birch wood, which formerly covered the whole neck, and these enclosures were first noticed some years ago, when the wood was cut. None of them are marked on the 6-inch Ordnance Survey map. Except round the margin of Loch Davan, the northern slope of the neck, where the trees have been removed, is remarkably stony. Everywhere larger or smaller blocks of grey hornblende meet the eye and encounter the foot, so that in many places it is impossible to take a step without kicking a "blue heathen," as these stones are locally termed. A short distance down the slope towards Loch Davan, at the east end of the neck, there are three or four enclosures and one or two less well-defined ones, all close together. At the same level, but a quarter of a mile to the west, there is a group of three well-marked enclosures and a circle with stones at intervals. A little to the south-west there is another circle, perhaps two.

Between these two groups of circular enclosures may be observed long lines of stones, which seem to be artificial, stretching in an uneven course, sometimes from east to west, sometimes from north to south. In their present state they are not walls, and perhaps were never destined to serve as such. Sometimes the stones are single, sometimes there may be several to represent the thickness of a wall. In places the stones are great large blocks that would take three men to move, elsewhere they are smaller and partly embedded in the ground. There is nothing regular about them except their continuousness, and the constant small changes of the direction of the alignments is inexplicable. The most northerly alignment begins at the eastern side of No. 3 enclosure and after a zigzag course of about 300 yards, disappears among the stones that strew the surface. These alignments may have been boundaries, though the spaces they bound seem too contracted and

too stony to be worth the trouble of marking out in so laborious and special a manner.

The westerly group of three enclosures was the first to be explored. The most westerly of these is No. 1, which differed from the others in that it was impinged upon by a circle with stones at intervals in such a

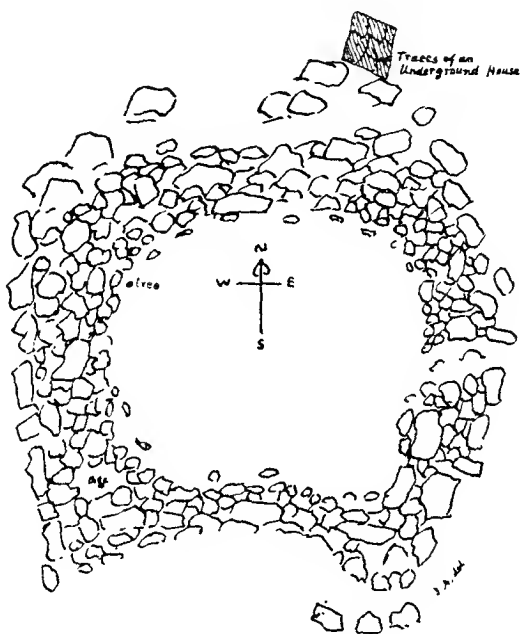


Fig. 1. Ground Plan of Enclosure No. 1. (Scale 24 feet to an inch.)

way that its southern circumference was slightly bulged inwards. No. 2 lies 40 feet east of No. 1, and has the peculiarity of being paved with stones. No. 3 lies 36 yards 1 foot from No. 2 in a direction north 60° east (magnetic).

The outside diameter of No. 1 (figs. 1 and 2) is about 58 feet and the internal diameter 32 feet, with an entrance to the south-east. The walls, which are in a dilapidated condition, cover the ground for a width of

from 13 feet to 17 feet, and enclose a slight hollow. The general form is somewhat of a horseshoe, in consequence of the bulging in of the southern segment of the enclosure. The floor lies about 4 feet below the top of the low mound of the circle to the south, and 2 feet 2 inches below the slope of the hill to the north. On the west side, where the



Fig. 2. Enclosure No. 1, excavated.

wall is best preserved, excavation showed that the foundation-stones reposed on the fine yellow gravel underlying the upper layer of humus from 10 inches to 12 inches deep. Here the wall was 4 feet high, or 3 feet above the present level. The stones are not laid in regular courses, but in the northern segment larger stones are found on the original outer and inner faces of the wall, with smaller stones between.

At present, except towards the west, all the stones have fallen down the slope of the hollow forming the enclosure, so that along the crest of the slope no two stones are left one on the top of the other. Some of the stones are of large size, and though partly embedded in the ground, measure 4 feet 10 inches by 2 feet 8 inches, and 3 feet 8 inches by

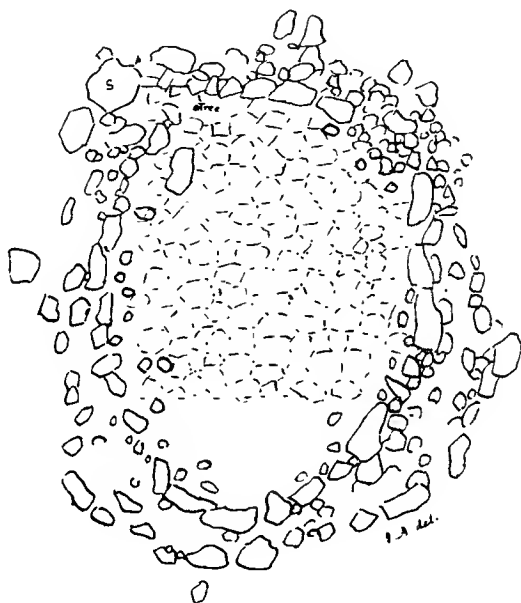


Fig. 3. Ground Plan of Enclosure No. 2. (Scale 24 feet to an inch.)

2 feet. A trench cut from north to south and another from east to west across the floor of the enclosure and carried down to the pan brought no relic of any kind to light. Owing to the constant rain, the trenches soon filled with water, and it was useless to attempt to riddle the soil extracted.

No. 2 is a saucer-like depression, somewhat oval in form (fig. 3), with its longer axis running north and south. The external diameters are

63 feet and 56 feet, the internal ones 47 feet and 39 feet. The floor lies 3 feet 2 inches below the top of the hill slope on the south side and 2 feet 9 inches below it on the north side. Some of the stones of the enclosure are of large size. Though partly embedded in the soil, two of



Fig. 4. South end of Enclosure No. 2.

them measure 4 feet 3 inches by 4 feet by 3 feet 4 inches, and $4\frac{1}{2}$ feet by 3 feet 3 inches by 2 feet 4 inches above the surface.

For a distance of 34 feet from the north the floor is paved with large stones, many of them of very regular quadrangular form, requiring two men to lift. The pavement extends up to the very end of the northern part of the enclosure, and terminates at the foot of some large stones set

on end, that bound the inner edge of the circle in this direction. At 6 feet from the south end was found a fragment of hard, glazed pottery, showing wheel-marks on the bottom. At $22\frac{1}{2}$ feet from the north end was another fragment of the same pottery. Both were at a depth of 3 inches to 4 inches below the surface. In making a cross cut from

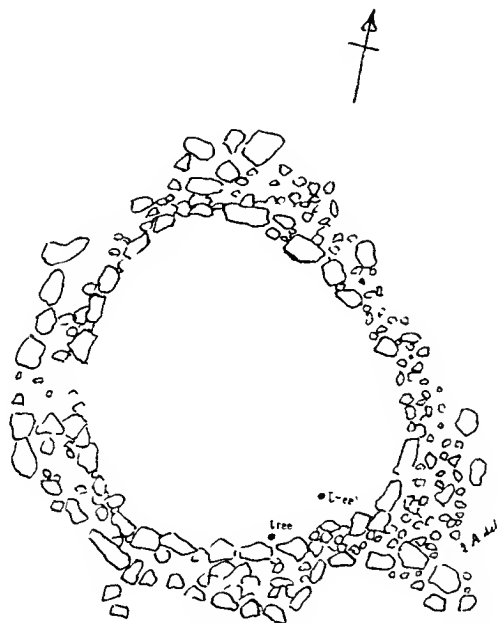


Fig. 5. Ground Plan of Enclosure No. 3. Scale 24 feet to an inch.

west to east, a fragment of dark glazed pottery, consisting of part of the neck and handle of a small jug, was discovered at the depth of a foot from the surface, as it had slipped between the crevices of the pavement. It differed from the other fragments in being glazed both on the inner and outer surface. Four more pieces of the same jug were picked out of the matted roots of the grass growing on the top of an adjacent stone. In the central excavation, at 17 feet from the south end, several small pieces of charcoal were brought to light. The con-

tents of the trenches were riddled, but the only objects found were a tiny fragment of the glazed ware and a stone disc, 4 inches in diameter and $1\frac{1}{2}$ inches thick, flat on one side, which seems to exhibit signs of use, and resembles others from the Culbin Sands, *Mus. Catal.*, p. 94, and *Proceedings*, vol. xxxvi. p. 36.

No. 3 (fig. 5) has an external diameter of 52 feet and an internal of

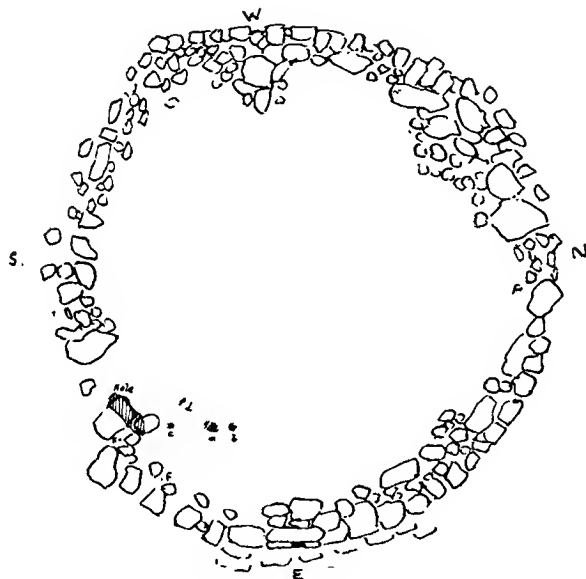


Fig. 6. Ground Plan of Enclosure No. 4. (Scale 24 feet to an inch.)

36 feet. The floor is flat and not dished as in Nos. 1, 2. A trench 12 feet wide was cut across it from north to south down to the yellow gravel. At 19 feet from the north end, at a depth of 3 inches, just below the turf, a small piece of a flint flake, showing conchoidal fracture, was picked out, and not far off were small bits of charcoal. All the stuff taken from the trench was put through the riddle, but nothing save a very few small pieces of charcoal were observed.

No. 4 (fig. 6) lies about a mile west of the triple group on the slope of

Culblean Hill, facing the east, on a steep incline of about one in five. The external diameter is 60 feet, and the internal one 50 feet. The walls, or rather their structure and foundations, are better preserved than in the previous examples. Although the upper side is $1\frac{1}{2}$ feet below the surface of the slope, the internal area shows no hollowing, and is



Fig. 7. Orifice in Wall of Enclosure No. 4.

formed by the natural level of the hill. The entrance faces Mount Keen to the south.

At the lowest point of the enclosure, on a level with the ground, three large stones are arranged to form a quadrangular orifice (fig. 7), 1 foot 9 inches wide, 1 foot high, and reaching 2 feet back, where it was closed by another large stone. The stone on the right side is a nearly quadrangular block of granite, measuring 4 feet 2 inches by 1 foot 9 inches by 1 foot 9 inches. The stone to the right of it was still larger,

5 feet 8 inches by 2 feet 3 inches by 10 inches. The stone forming the left side of the orifice was also large, but of more irregular form: that to the left of it measured 4 feet by 2 feet by 1 foot 3 inches. A specially close examination failed to explain the purpose of the orifice. Nothing was near it or below it except the skull of an old fox, which lay under the right-hand stone, and part of the lower jaw, which was missing, was picked up a few inches distant in the earth in front of the orifice. As there was a rabbit burrow close to this point, he may have met his death in pursuit of a coney.

The whole of the internal area of this enclosure was trenched down to the hard pan: some of the stuff was riddled, and all the stones of the wall, from the south entrance round by the orifice to the north side, were uprooted and shifted forwards, and the ground below excavated to the hard pan. The depth at which this was found varied greatly. At the centre it was only some 9 to 10 inches below the surface; at the north side and just behind the orifice it lay fully 3 feet below the surface, and 3 or 4 yards to the right of the orifice it was found at a depth of 3 feet 8 inches.

In the course of the excavation three pieces of flint, showing signs of work, though none is an implement, were picked up. Their positions are marked on the plan by the letter F. One was found at a depth of 3 inches and 1 foot from the inner side of the wall towards the north. The other two lay 3 or 4 inches below the surface, in the fine yellow gravel under the wall, a few feet east of the entrance, and about 6 feet apart.

Small pieces of charcoal occurred at a good many points at various depths, especially in the eastern half of the area, and sometimes below the wall. The morsels found just above the pan, at depths of 2 feet 8 inches and 3 feet, are hard to explain, though the circumstance may perhaps be attributed to the movements and disturbance caused by rabbits, moles, and earthworms. At the point *a* on the plan, 17 feet 8 inches from the left-hand stone of the entrance, at the depth of 1 foot, a thin layer of charcoal and burnt earth was encountered, covering an area of about 2 feet square: 5 inches lower was another layer, and about

the same depth a third stratum of the same stuff. Though all this was carefully riddled, nothing was found. A small patch of burnt earth and ashes was found at *b* at a depth of 14 inches. At the point *c*, 13 feet from the entrance, about 1 foot from the inner side of the wall, and at a depth of 2 feet, a small pocket of burnt earth and charcoal was cut out and riddled, but with no result. A little more was observed at *d*.

Just to the right of the entrance, and below the wall, a hole $6\frac{1}{2}$ feet long by 2 feet wide, excavated 20 inches into the hard pan, which is nearly as hard as stone, was discovered. The bottom of the hole was 3 feet 4 inches below the surface, but its purpose was not ascertained. A few small pieces of charcoal lay above the hole, but none in it. There were no signs in the overlying gravel and earth that a hole had been sunk, though bits of broken pan were observed not far off, between the yellow gravel and the dark earth overlying it.

By removing all the stones of the eastern semicircle of the enclosure, a better opportunity was afforded of observing the construction of the wall. The foundations were very well and firmly laid, and were embedded from 6 inches to 12 inches in the clean yellow gravel. As there was no thin layer of decomposed black vegetable matter beneath the stones, such as would have been present had the stones been laid on a grassy or heathery surface, it is probable that a shallow trench, a few inches deep, was first cut to receive them. The wall was about 5 feet thick, and composed on the whole of an inner and outer circle of large stones, some heavy enough to require three men to raise, with a packing of smaller stones between. The stones of the outer ring were laid lengthways, with a short end to the front, and slant slightly inwards. Below the largest stones, which seemed to lie on the surface and form the foundation, there was often a bedding of smaller stones, though some of these were of fairly large dimensions. On the steepest part of the slope, for several feet on each side of the orifice, there was a sort of platform or batter, about 2 feet wide, in front of the wall, evidently placed there to strengthen and retain it where the thrust was greatest. The total height of the wall when complete could

hardly have exceeded 3 feet, for few if any stones seem to have been removed on the north side, where in one part three layers of stones were still in place. On the south side the stones were fewer in number, and some of them may have been removed, as in the old leases certain tenants had the right of taking them away for building purposes. On Culblean Hill all the stones are granite blocks which are suitable for building; the hornblende found on the neck of land between the two lochs is not so used.

No. 5 enclosure is somewhat larger than No. 4, having an internal diameter of 42 feet; it lies 42 feet from it in the direction north 10° west. The entrance was from the south-east. An area 20 feet square round the centre was trenched down to the hard pan, which was encountered at a depth of from 16 to 18 inches, but nothing was found, not even charcoal. But outside the enclosure on the south side, in a trial excavation measuring 10 feet by 5 feet, a little charcoal and burnt earth in some quantity was found under a stone, but nothing else. Just outside the enclosure on the north-east side, Greig, one of the workmen, who had a remarkably keen sight for flints, picked up a small but very well made flint arrow-head of Neolithic type at the mouth of a rabbit-hole. Towards the south-east there is a recess formed in the centre of the wall, measuring 2 feet 10 inches by 3 feet by 2 feet 10 inches high. A large stone, forming part of the front of the original wall, has been utilised, but other stones have been displaced from their old position, and the sides are built up with small ones. It has all the appearance of being a temporary shelter of relatively recent construction. No plan was made of this enclosure, as it offered no special feature to distinguish it from others.

No. 6 is a small enclosure, lying about 120 yards north-east of No. 4, in a fold in the ground at a considerably lower level. To the east and south-east is a small watercourse. On the west side the walls are some feet lower than the crest of the rising ground in front of them. In other directions they are on the same level as the ground outside. A trench 10 feet wide and 37 feet long was first cut from east to west, as

at 10 feet from the east end there was a small mound 10 feet in diameter and 6 inches high, which looked as if it might be sepulchral. On removing the earth above it down to the pan, what seemed to be a paved area was disclosed. But further investigation showed that two or three of the stones were embedded so firmly in the pan that they could not have been placed there, and the whole pavement, as well as the mound above it, was evidently natural. Except a few pieces of charcoal, nothing was found in this trench. The whole of the southern half of the enclosure was then trenched down to the hard pan, but without success. The plan made of this enclosure was unfortunately lost.

EXPLORATION OF A CIRCLE AND UNDERGROUND HOUSE.

As no finds of importance had been yielded by the exploration of the enclosures, their age and destination still remaining uncertain, it became necessary on 5th September to examine more thoroughly the circle lying south of No. 1 enclosure, and actually in contact with it. It consists of a low circular mound about 1 foot high, in some places from 12 to 14 feet wide, in others less, bounded by a circle of largish stones, placed at intervals. The outside diameter is about 60 feet.

As early as 19th August, quite by accident, a trial trench had been made in it, which disclosed at a depth of 17 inches a piece of rough pavement (fig. 8), 33 feet long and 7 feet wide, of curved form, partly following the periphery of the circle. Charcoal and signs of fire had been observed on its surface at various points along its whole length. On 22nd August the exploration of the circle was resumed, and the pavement was found to cover a length of 56 feet, but it narrowed to 4 feet 3 inches in width, and seemed to come to the surface and there disappear. About 15 feet of the pavement at the north end was lifted and found to rest on fine yellow gravel. Traces of fire, such as charcoal, burnt earth, and a white sand containing diatoms,¹ the result of burning

¹ Extract of a Letter to Dr Ogsten from Professor Trail:—"The charcoal still retains enough of its structure to show that it is from a conifer, and I have no doubt that it was wood of a Scotch fir (*Pinus sylvestris*). The earthy matter is very largely

peat, were abundant, both above and below the pavement. Though all this burnt stuff and the earth near it was carefully passed through a fine riddle, nothing was found, no sherds of pottery, no animal bones or food



Fig. 8. Pavement in the interior of the circle.

sand (like that along the Dee) mixed with finer particles, and seemingly compacted in part with iron oxide. The iron might be merely from the soil. Was there any sign of metal weapons or articles?

"The finer particles show no trace of structure, but mixed with them lie a number of diatoms, suggesting a mixture with the diatom earth. There seems no marl, at least there is no effervescence with acetic acid. May the stuff in part be the ashes remaining after cremation of a body? The use of turfy peat (along with wood or alone) might account for the sand and diatoms." Dr Ogsten had submitted to Professor Trail of Aberdeen some of the charcoal and white sandy-looking stuff, for his opinion upon it.

refuse. It was on account of finding so little that the excavation of the circle had been temporarily abandoned.

From about the point *a* on the plan (fig. 9)¹ a trench 5 feet wide was now cut in a direction south 20° east (mag.) towards *b*. Down to a depth of 2 feet the humus was unusually dark. At 6 feet 9 inches from *a* and at a depth of 2 feet there was a cavity or pocket containing a layer of ashes and burnt wood from 6 to 9 inches deep. It was covered by a good-sized stone which lay 6 inches below the surface, and may have been one of the paving stones. Under another stone, 8 feet from *a* and 1 foot 1 inch below the surface, was a quantity of charcoal, burnt earth, and white diatomaceous sand. This extended for a foot in width across the trench. The burnt stuff was riddled, but produced nothing. Between 8½ feet and 11 feet from *a*, at a depth of a foot, there were continuous traces of burning across the width of the cutting. At a distance of 22 feet 10 inches from *a*, at the depth of a foot, a flint pebble, showing conchoidal fracture and rough chipping at one edge, was picked up. At 23 feet from *a*, charcoal and burnt earth for the space of a foot were again encountered. At 32 feet from *a*, under two large stones, lay a quantity of burnt earth, white diatomaceous sand, and charcoal, in a layer 2 inches deep and 3½ feet wide. These stones, which formed the limits of the circle in the direction *b*, were squarish blocks, measuring on an average 2 feet by 2 feet by 1 foot 3 inches. The whole contents of the trench for the first 10 feet from *a* were riddled, but without result. This portion of the area seemed to be unpaved, but from 10 feet to about 22 feet in the direction of *b* there was a paved surface.

¹ On the last day but one I had the misfortune to lose my note-book, containing all the notes and working plans drawn to scale on the ground, that I had made during a month's work. Fortunately, every evening I used to transcribe my notes, and had had time to make fair copies of the plans of enclosures 1-4, so that much was saved. But the plans of the circle and details of the underground house I have not been able to restore exactly. Before leaving Dunnet I made a plan of the circle after some of the stones had been removed during the excavations, and after all the holes had been filled up and the turf replaced. It is not so satisfactory as the plan that was lost, but is sufficient perhaps for the purpose.

From the point *c*, 10 feet from *a*, a cross-cutting was made to the right and left in order to trace the extent of the paving. That to the right proved that the paving was continuous with the end of the 56 feet of pavement disclosed on 22nd August. What was now exposed was very rough, and lay immediately below the grassy surface.

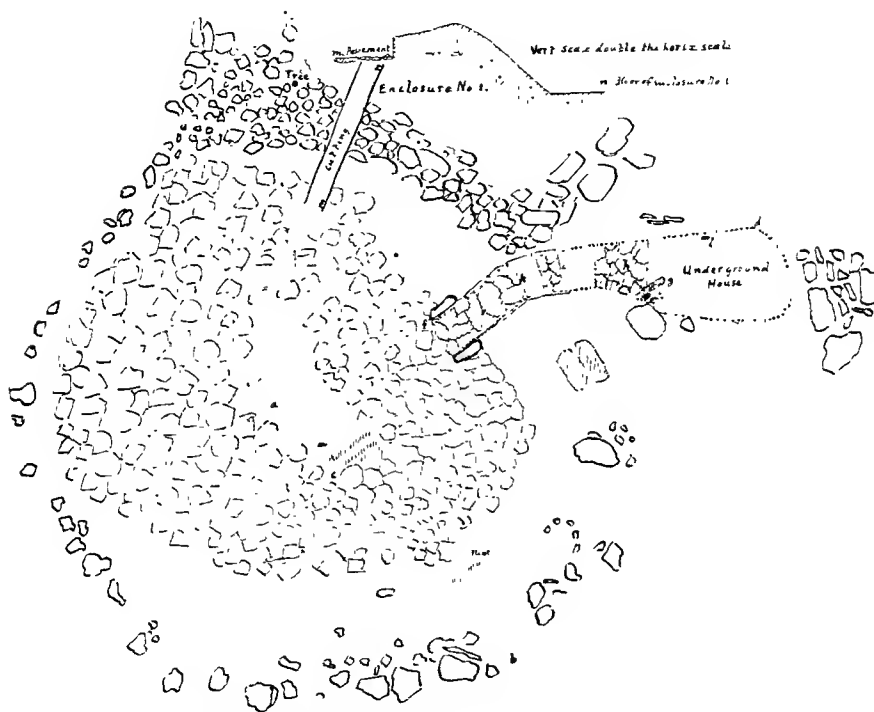


Fig. 9. Ground Plan of Circle and Underground House adjoining Enclosure No. 1. (Scale 24 feet to an inch.)

In the cutting to the left, in the direction *d*, the paving ceased at 22 feet from *c*, but it was remarkably level and well laid. At 26 feet 4 inches charcoal was encountered at a depth of 18 inches, and a stone blackened by fire. Between $27\frac{1}{2}$ feet and 32 feet from *c* some large stones were found, from 9 inches to 12 inches below the turf. They rose

up like the base of a wall, and formed a flat, paved-like surface on the top. They lay on the periphery of the circle, and bounded it in this direction.

Although the circle ended here, the trench was continued in a north-easterly direction to *d*, a distance of 54 feet 9 inches from *c*, so as to examine a slightly curved hollow in the ground a short distance beyond. The end of the hollow which lay to the right of *d* was marked by a deep setting of large stones, as shown on the plan. At 34 feet more charcoal and a layer 3 to 4 inches deep of the white sand was observed, the lowest layer being 2 feet below the surface. The space between 36½ feet and 40 feet from *c* was occupied by a huge stone *e*, lying across the trench. This was afterwards found to mark the edge of an underground or earth-house. The whole of the stuff henceforth extracted was the filling in of this dwelling, for the roof had disappeared, and the interior was occupied by loose mixed earth and stones. The excavation was carried down to a depth of 6 feet, to the floor of the earth-house, and it was found that the lower 4 feet had been cut out of the hard and solid pan.

At 54 feet from *c*, at a depth of 2 feet, half of a burnt hazel-nut was picked up. At various points and depths, such as 2 feet 8 inches, 3 feet 4 inches, and 5 feet 2 inches, a few small pieces of charcoal were found while excavating the trench; and at 2 feet beyond the point *e*, at a depth of 3 feet 4 inches, small particles of burnt bone occurred, with small bits of charcoal. At 2 feet 10 inches from *e*, and at the same distance below the surface, two or three more small pieces of bone and charcoal were observed, and also on the pan at a depth of 5½ feet.

The excavation now took a direction, slightly curved, in the direction of *f*. At a depth of 2 feet 8 inches and 1 foot from *e*, we came on what looked like a small wall *g*, 3 feet long and 2 feet 2 inches wide, with one end resting against the side of the earth-house. At 1 foot 7 inches in front of the wall, at a depth of 2 feet 9 inches, an angular piece of iron was picked out, and a little below it many small particles of burnt

bone mixed with charcoal. At a depth of 6 feet, in the angle formed by the wall, though this did not reach quite so far down, was a stone, well blackened by fire, and many particles of bone. Quite in the angle was a layer of black ashes, overlying $2\frac{1}{2}$ inches of red, burnt earth, the whole covering an area about 4 feet long by $2\frac{1}{2}$ feet wide. The depth from the surface was 5 feet 7 inches. Riddling the stuff did not result in any find.

At 3 feet 3 inches from *e*, at a depth of $3\frac{1}{2}$ feet, part of the upper stone of a quern, which when whole had a diameter of 16 inches, was unearthed.

Beyond the wall, on the floor of the earth-house, was a very smooth pavement *h*, of 12 to 14 flat stones, measuring 5 feet 10 inches by 4 feet 6 inches wide. On lifting the stones they were found to cover a trough-like cavity sunk into the pan, measuring 4 feet by 2 feet by 15 inches deep. The stuff from the cavity was riddled when sufficiently dry, but only particles of charcoal and one or two of burnt bone were observed. It may be that the whole floor of the house was originally paved, and that this was a portion of it. For a few feet further on another bit of pavement *i*, 3 feet long, was brought to light at a depth of 5 feet from the surface. Below it was a saucer-like depression, a few inches deep, containing a very few minute fragments of burnt bone and some larger bits of charcoal.

Continuing the excavation, it was found that the floor gradually rose, and was succeeded by a pavement *k*, 10 feet 10 inches long, which fitted on to it, and continued to rise till it joined the pavement of the circle without any break or discontinuity whatever. The circle and the underground house are therefore intimately connected. It is the first time that the exit from an earth-house has been found to lead out upon a circular paved space, bounded by a low mound, with a setting of stones at intervals. The entrance to the house was from the south-west, and above ground it was marked by two stones, one on each side, of considerable dimensions, requiring three men to move. That on the left measured $3\frac{1}{2}$ feet by 2 feet 7 inches by 1 foot, and about half of it was

embedded in the ground. The side walls of the interior, from the entrance to nearly as far as *e*, were partly composed of very large stones, with a smooth surface on the outside, and these had evidently been selected and laid in position with care.

The far end of the underground house was also cleared out, and about 6 feet from *d*, at a depth of 6 feet 1 inch, two largish pieces of burnt bone and a mixture of smaller particles and charcoal were found in a small cavity, covered by a flat stone *l*. It had the appearance of being an interment. With the exception of occasional particles of burnt bone and charcoal, nothing of importance was brought to light: but it was found that the far end of the house was somewhat enlarged, and the walls were composed of the hard pan. The plan of the earth-house here given is only approximately correct, for the reasons given in the note above. Its total length was about 41 feet.

Some 15 feet of the pavement of the circle in the cutting between *c* *e* was now lifted, beginning at the north-east end. Occasionally the stones were found in two layers, and in any case they lay on the fine yellow sandy gravel. As each of the large flat stones was raised, where the pavement was best it was found to overlie burnt earth, pieces of charcoal, burnt wood, and occasional particles of bone. One area, showing strong traces of fire, was from 5 feet to 6 feet long, others might be 2 feet square. All this showed that the circle was in use before the pavement was laid down, and that this improvement was an afterthought.

TRACES OF ANOTHER UNDERGROUND HOUSE.

On the north-east side of No. 1 enclosure there is a curved hollow in the ground, about 30 feet long and 6 feet from the wall, which looked as if it might contain another underground house. As it was the last day and a short one, being Saturday, there was only time to sink a trial trench across the hollow. At a depth of $7\frac{1}{2}$ feet we came upon a fine piece of smooth, well-laid pavement, 5 feet 10 inches wide by 5 feet 8 inches long, the length of the excavation. Only a few pieces of charcoal

and particles of bone were brought to light, but it was evident that we had hit upon another underground house. As there was no time to make a complete exploration of the site, the hole dug was filled in again and turfed. But its position is now known for any future explorer.

An underground house at Milton of Whitehouse, between two and three miles to the north of the Dinnet example, presents certain features in common with it. It was first described by Mr G. Gauld in *Scot. Notes and Queries*, vol. ix. p. 147 (1896), and then commented upon by Mr D. MacRitchie in *The Antiquary*, vol. xxxiii. p. 135. Both seem to have had a roof of timber, and in the Milton example the inner end of the dwelling is paved. In front of the entrance, at a distance of about 18 feet, there is also a paved space measuring about 7 feet 9 inches by 5 feet 3 inches, but raised from 10 inches to 1 foot 8 inches above the level of the ground. Mr Gauld took it for an altar. The differences, however, between these two circle-houses are considerable. At Milton the entrance lies on the top of a knoll, and nearly the whole length of the dwelling is on a slope. The entrance is partly blocked by a slab 2 feet 4 inches in height, while at the bend, which forms nearly a right angle, the narrow passage is nearly filled by a granite slab 3 feet 11 inches high.

The distinguishing feature of the Dinnet earth-house is that it is connected with a paved space surrounded by a very low, scarcely perceptible ring-wall of earth, along which there is a setting of stones at intervals. Here the cooking seems to have taken place, to judge from the numerous marks of fire, though it is remarkable that no regular fireplace, no refuse, and no sherds of pottery were brought to light. The burnt bones, as a rule, were in an exceedingly comminuted state, but some larger pieces were submitted to Professor R. Reid of Aberdeen. In a letter to Dr Ogsten, he says the only fragment, of the nature of which he can be satisfied, is the small piece of the shaft of the long bone marked No. 1. It is certainly not human, and seems to have belonged to the humerus of a small animal such as a cat. He can make nothing

definite of the other fragments, but his impression is that they are not human.

What was the object of these walled enclosures, Nos. 1 to 6, described above? As the excavations yielded practically nothing, I can only suppose that they were cattle-pounds, where the beasts were enclosed at night to preserve them from wolves and human marauders. The traces of fire found in No. 4 do not militate against this suggestion, as in olden times passing sick cattle through fire was a recognised specific.

The comparatively late date of these structures, supposing, as may reasonably be done, that they are contemporary with the earth-house, is sufficiently indicated by the quern and the fragment of iron. The fragments of glazed pottery from No. 2 may possibly show that this enclosure was in use up to a relatively recent period.

II.

ON THE STANDING STONES AND CUP-MARKED ROCKS. ETC. IN THE
VALLEY OF THE ADD AND SOME NEIGHBOURING DISTRICTS OF
ARGYLE. BY DAVID CHRISTISON, M.D., SECRETARY. (PLATES I. II.)

Perhaps no district in Scotland contains so many interesting remains of antiquity as the part of Argyle between the south end of Lochawe and the Mull of Kintyre, especially the part comprised in the parishes of Kilmartin, Kilunichael Glassary, and North Knapdale. Sepulchral cairns, stone circles, standing stones, cup- and ring-marked rocks, Early Christian monuments, churchyard recumbent monuments of the Iona type, hill forts, mediæval castles are all represented, and generally well represented. No wonder, then, that the chief antiquarian remains in a region so richly endowed have been already recorded in our *Proceedings*, or in special works, by such ardent observers as Canon Mapleton, Canon Greenwell, Captain Thomas, Sir James Simpson, Miss Christian MacLagan, Colonel White, Messrs James Drummond and Romilly Allen. But where they reaped there is still much to be gleaned, and during a residence last autumn at Cairnbaan I was able to make observations on a considerable number of objects which have either altogether escaped attention, or have been imperfectly noticed hitherto. In the present paper I shall confine myself to the standing stones, cup-marked rocks, and one or two other remains which specially deserve to be recorded, leaving the hill forts, of which I succeeded in seeing no less than twenty-two, to a future occasion.

I. STANDING STONES.

The standing stones of the district are all derived from the early diorite rock which along with quartzite forms the infinitude of rocky knolls and miniature mountain ranges, invariably running from south-south-west to north-north-east, that play such a prominent part in the geology and scenery of Southern Argyle. The diorite knolls, as Dr

Peach pointed out to me, are readily distinguishable, by the growth of grass and bracken upon them, from the quartzite knolls, which are usually clothed with heather, and also by their mode of decay. Usually rounded and smoothed by glacial action at the ends, the sides at the top are apt to break into thin tabular slabs, which not unfrequently are narrow and pointed, and project in long irregular lines, which at first



Fig. 1. Druite Rocks, Torrabhlarain.

point upwards, then horizontally, and then downwards, finally losing their hold and lying on the slope. A fine example (fig. 1) occurs at Torrabhlarain, Glassary, where the disrupted rocks form a natural *chevauc-de-frise* to a prehistoric fort. I have seen many such tables *in situ*, 8 to 12 feet long, but Mr E. B. Bailey, of the Geological Survey

Staff, estimated the length of some on a knoll near Tayvallich at not less than 25 feet. Nature having thus provided ready-made standing stones, all that the primitive inhabitants had to do, after sliding them down the slopes, was to drag them along the valleys to the selected sites, which are always on low ground.

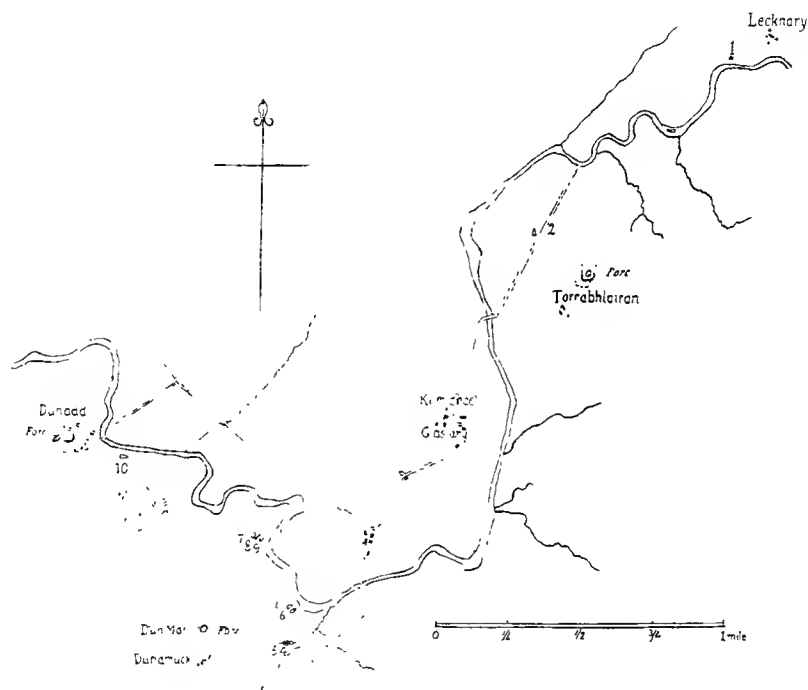


Fig. 2. Chart of Standing Stones, Valley of the Aird.

The most interesting standing stones of the neighbourhood occur in groups in the valley of the Kilmartin Burn, but as they have been already described by Dr Stuart,¹ Sir James Simpson,² and Mr Romilly Allen,³ I need say nothing about them.

¹ *The Sculptured Stones of Scotland*, ii. 67, pl. exix.

² *Proc. S. A. Scot.*, vi, App 34. pls. xvii, xviii.

³ *Op. cit.*, xvi. 110.

STANDING STONES IN THE VALE OF THE ADD.

The river Add, on escaping from the hill country, meanders through four miles of cultivated meadow, as far as Dunadd, whence, with many a bend, it flows 3 miles further, through the dead level of the Monadh

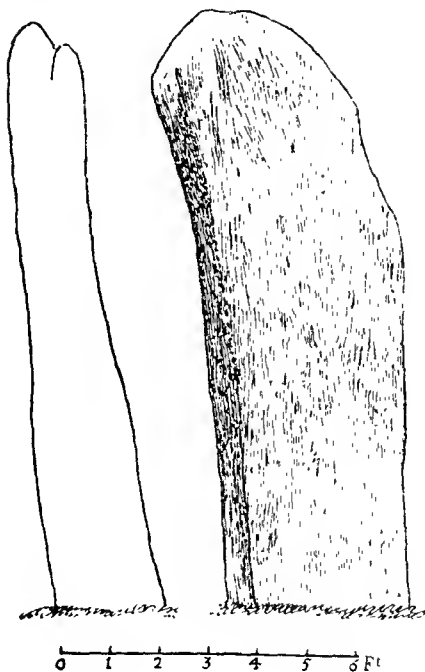


Fig. 3. Standing Stone No. 1, Lecknary.

Mor, to fall into Crinan Loch. In the meadowland are three monoliths and three groups of standing stones, placed as shown in the chart, fig. 2, reduced from the 6-inch Ordnance map.

1. *Monolith at Lecknary.* Fig. 3.

Beginning at the upper end of the meadowland the first example

stands 250 yards west-south-west of Lecknary farmhouse, and 30 north of the river. It is called "An Car" on the Ordnance map, a rare instance of this application of an obsolete Gaelic term. I did not see this stone, but I am able to give a front and side view¹ of it (fig. 3), from a measured drawing kindly taken for me by Miss C. S. Campbell, Glassary Manse. It is 12 feet high and 3 wide at the base.

2. *Monolith near Kilmichael Glassary.* Figs. 4 and 5.

Nearly a mile south-west of the last and $\frac{3}{4}$ of a mile north-north-east of Glassary Kirk, in a level field on the west side of the public road and 350 yards east of the river, facing south-south-west, or right down the valley. It is 6 feet 4 inches high, 4 feet wide at the base, narrowing to 2 feet 8 inches at the top, and is 7 inches to 9 inches thick. Near the base of the face are about thirty small round and oval cups, most of which were recently uncovered by Miss Campbell, from whose rubbing fig. 5 is taken. The back of the stone (fig. 4) has two longitudinal ridges and bears five cups near the base.

3, 4. *First group near Dunamuck* Fig. 6

Nearly $1\frac{3}{4}$ miles south-south-west of the last, and 500 yards east by south of the fort at Dunamuck, two slabs lie prostrate in a field sloping gently to the Add, 220 yards to the north. The Rev. Duncan Campbell, Glassary, informs me that the spot is called *Leacachluine*, and in his

¹ My sketches of the stones are front views, with an occasional side view, and are on the uniform scale of 4 feet to the inch. I have set up some of the fallen stones in the figures as they would appear if rooted about 3 feet in the ground. Others, being partially overgrown, are merely represented in outline, as their form is uncertain. The numbers before the headings correspond with the distinguishing numbers of the stones on the chart.

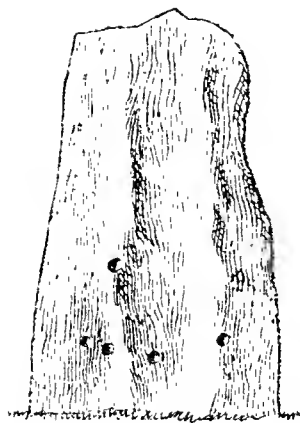


Fig. 4. Standing Stone No. 2, near Kilmichael Glassary. Back.

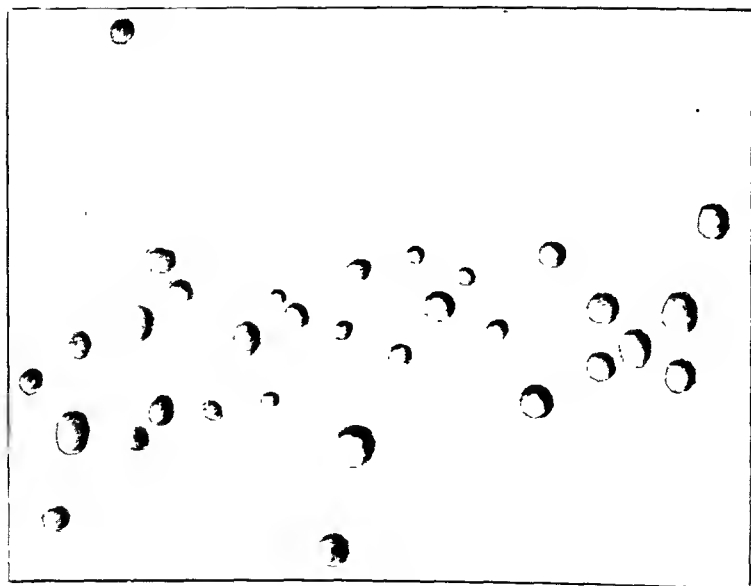


Fig. 5. Cup-marks on the face of the Standing Stone No. 2, Kilmichael Glassary.

early days a few cottages were still inhabited there, of which no vestige remains. Tradition has it that markets were formerly held here, and webs of cloth were measured on one of the stones. If re-erected, the stones would both face south-east, but one would stand about its own length in

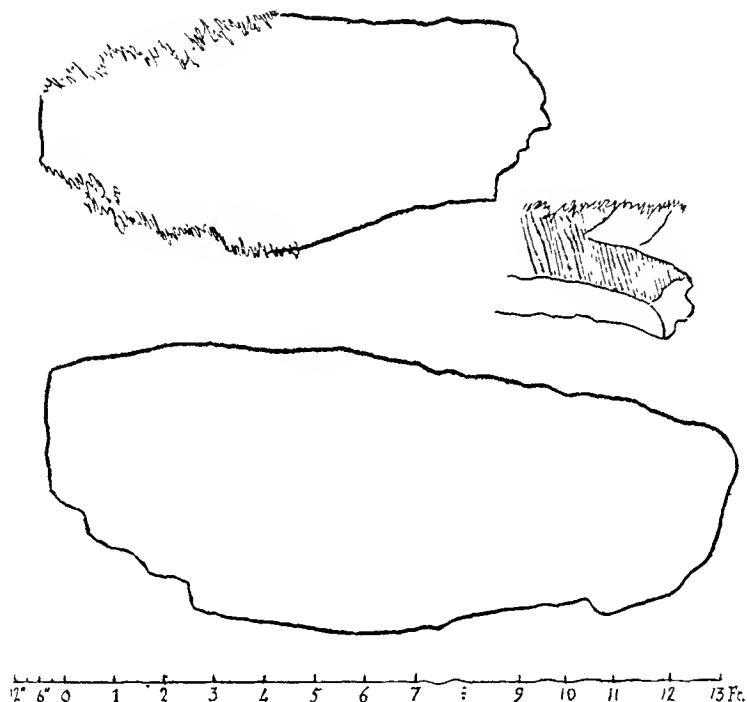


Fig. 6. Standing Stones, now prostrated, Nos. 3 and 4, east by south of Dunammh Fcrt.

front, and to one side of the other. The easternmost stone is 13 feet 3 inches long and 5 feet 6 inches wide at 3 feet from the base. The other, much buried at the base, is 10 feet 2 inches long and 5 feet wide near the middle. The top, partially buried, is split so as to gape like the open jaws of an animal, as shown in the figure.

5, 6. *Second group near Dunamuck.* Fig. 7.

Two stones stand in line, 20 feet apart, and facing north-east, 180 yards north of the last, and 60 south of the Add. One is 12 feet 6 inches high and 5 feet wide at the base, the other 8 feet 6 inches high and 3 feet 4 inches wide.

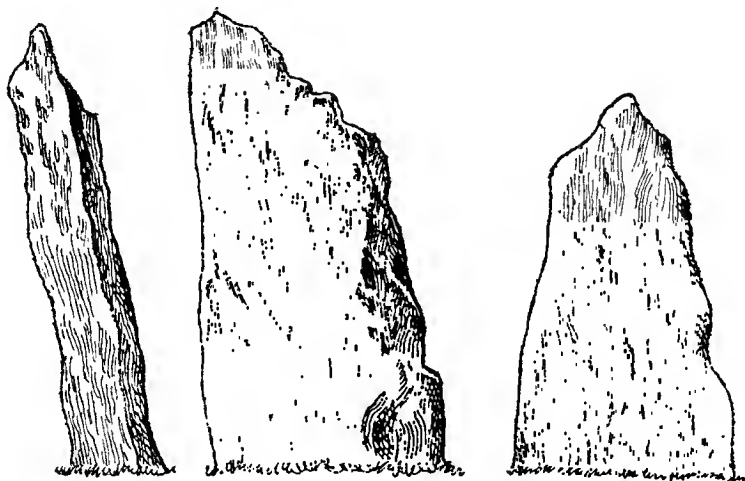


Fig. 7. Standing Stones Nos. 5 and 6, and side view of 5, east by north of Dunamuck Fort.

7, 8, 9. *Third group near Dunamuck.* Figs. 8, 9.

Nearly 500 yards north-north-west of the last, and 630 north-north-east of Dunamuck Fort, 70 yards from the river. Nos. 7 and 9 stand 14 feet 10 inches apart, in line, facing nearly east, as laid down on the Ordnance map, and No. 8 lies prostrate about half way between them, with its butt a foot behind their line, and its top pointing obliquely from it to the south-east. No. 7 leans back considerably: it is 9 feet high and 4 feet 8 inches wide at the base. No. 9 is 7 feet 6 inches high and 4 feet 6 inches wide at the base. No. 8, the fallen stone

(fig. 9), is columnar, 12 feet 3 inches long and 2 feet 3 inches to 2 feet 7 inches wide.

10. *Monolith near Dunadd.* Fig. 10.

A massive prostrate slab, 1000 yards west-north-west of the last, 300 east of Dunadd. If set up it would face east-north-east. It is 14 feet 3 inches long, 4 feet 5 inches wide at the base, increasing to 6 feet at 11

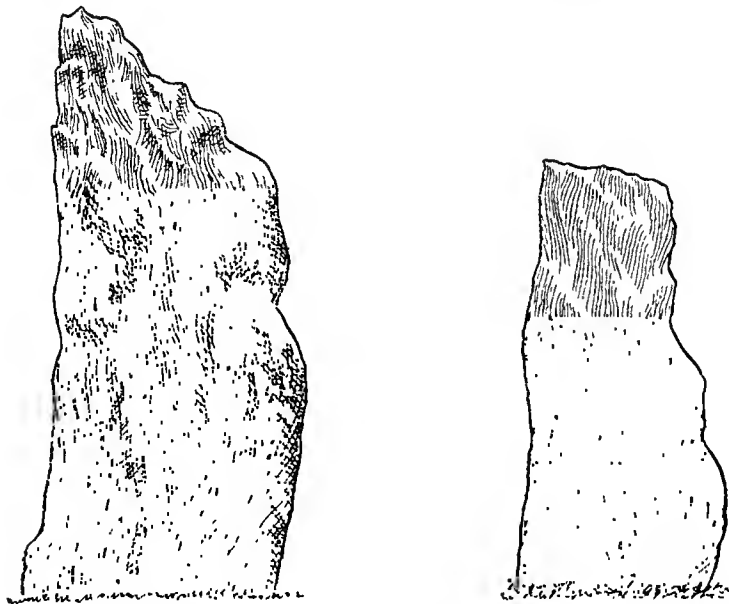


Fig. 8. Standing Stones Nos. 7 and 9, north-north-east of Dunamuck Fort

feet up. It is 16 inches thick on one side and only 4 inches on the other. A wide semicircular hollow in the top must have given it a singular aspect when erect.

It may be remarked regarding the Standing Stones in the vale of the Add, that they do not seem to be placed so as to favour the theory that has been advanced of their being the remains of a great avenue.

11, 12. *Standing Stones at Achnabreck, Cairnbaan.* Fig. 11.

11. About $\frac{3}{4}$ of a mile east-south-east of Cairnbaan Inn, and 300 south of Achnabreck Farm, a slender monolith lies on the west side of Achahoish Burn, and close to the south of a road, which was probably

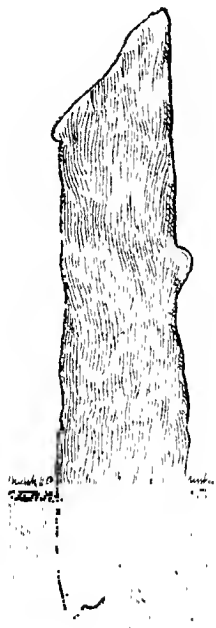


Fig. 9. Standing Stone No. 8, as if re-erected, in the same group as Nos. 7 and 9.



Fig. 10. Standing Stone No. 10, as if re-erected, east of Dunadd.

the highway to Lochgilphead before the moor in the valley below was drained. The stone (on the right, fig. 11) is 15 feet in length, from 2 feet to 2 feet 6 inches in width, and 10 inches to 16 inches thick. A very artificial-looking projection at the base, shown in the figure, is probably natural. The Rev. Mr Campbell remembers when this stone was erect.

12. 300 yards south by east of the last, and 500 south of the farm, a very thin slab (on the left, fig. 11), 7 feet 9 inches high, 3 feet to 3 feet 3 inches wide, and sharp-pointed, stands on the north bank of the road.

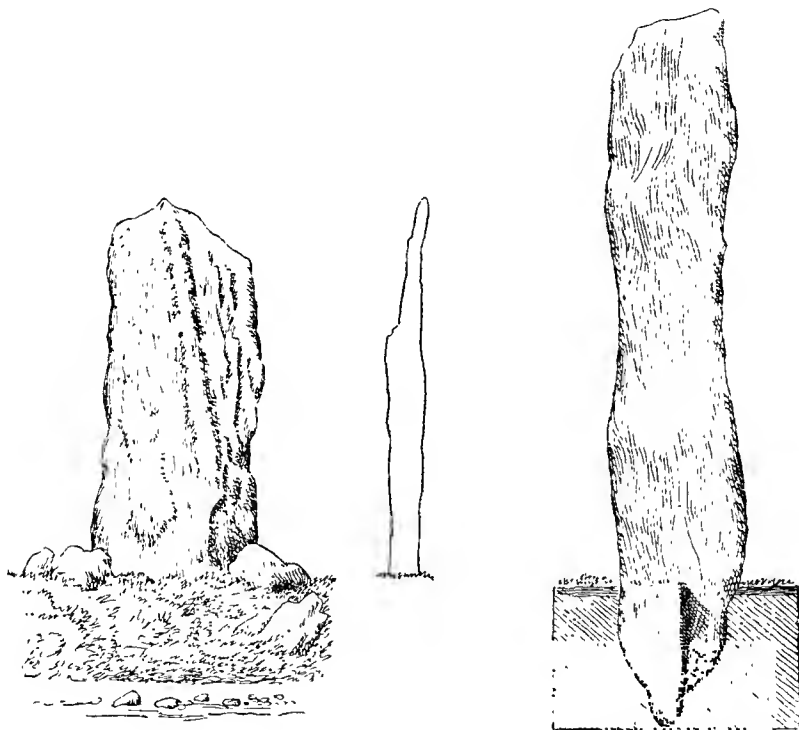


Fig. 11. Standing Stones Nos. 11 and 12 (No. 11 as if re-erected), Achnabreck.

13. *Standing Stone at Creagantairbh, Ford.* Fig. 12.

13. A mile and a quarter south-south-west of Ford Church, 130 yards east by south of Creagantairbh Beag farmhouse, close to the west side of the highway, stands the base of an obelisk, at the foot of

which the shaft lies prostrate. The base is 5 feet 6 inches high, and has an oblique ledge, half way up on to which the shaft would accurately fit. If restored, the height of the stone would be 16 feet 2 inches above ground, and it must have had a very handsome appearance,

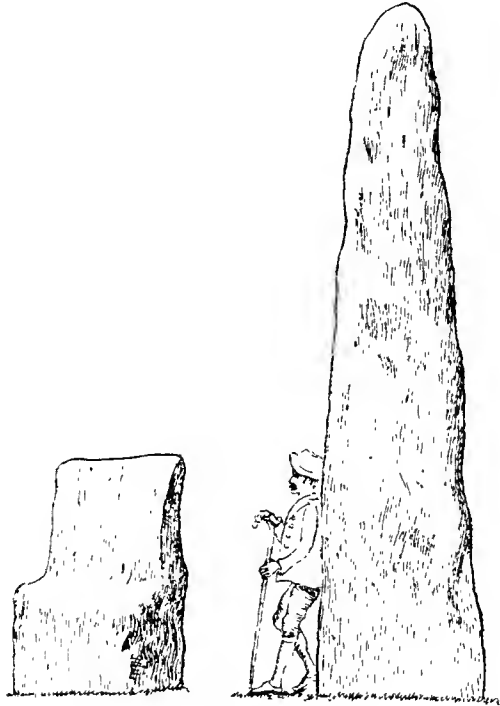


Fig. 12. Standing Stone No. 13, as if restored, near Ford.

tapering in width as it gradually does from 2 feet 6 inches to 2 feet. It is 18 inches thick at the base and 10 inches to 12 inches at the top. Mr Romilly Allen, in a paper in our *Proceedings* in 1880, says that he saw it "inclined considerably from the perpendicular," so the shaft must have fallen comparatively recently.

14. *Standing Stone at Barnshallig, Tayvallich.* Fig. 13.

14. About 1500 yards south-west of Tayvallich Church, 300 south by east of Barnshallig farmhouse, and 140 east-south-east of the prehistoric fort on Dun Brònag, this slender stone stands conspicuously on a pleasant green plain in a sequestered open moorland. The stone is



Fig. 13. Standing Stone No. 14, Barnshallig, Tayvallich.

11 feet high and three sided. I am informed by Dr Peach that a similar stone stands about 350 yards to south by west, near Upper Farnock, as marked on the Ordnance map.

The general remark concerning all these standing stones may be made, that they nearly all end in a point. Some gradually taper to the top. Others end in a peak at one end of the top. Occasionally the nearly level top is emphasised by a minute sharp point.

II. CROSS-SLAB AT KILMORY OIB, LOCH SWEEN.

Of the seven Early Christian Cross-slabs near Loch Sween described and figured by Captain, now Colonel, White, R.E.,¹ I have only seen

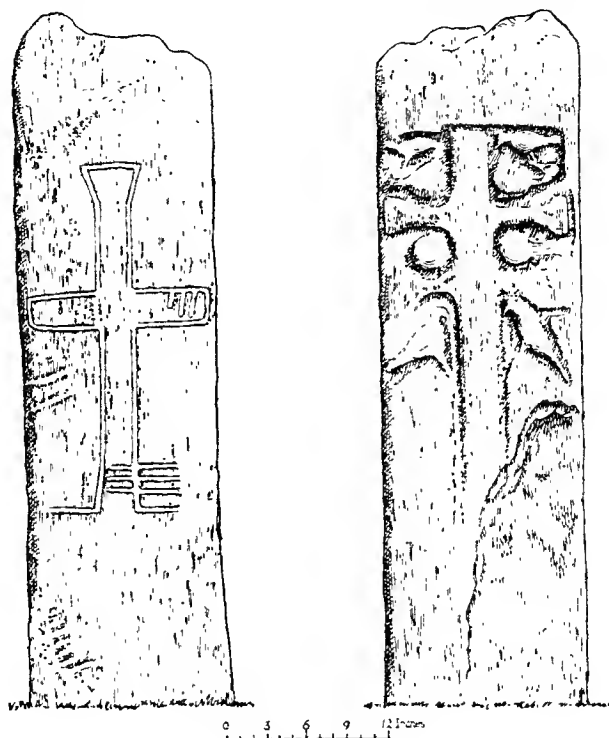


Fig. 14. Cross-slab, Kilmory Oib.

the one at Kilmory Oib. As my drawings, from rubbings made by myself, show some details not given in his freehand sketch, I reproduce them in fig. 14.

The slab stands sentry over a well at Kilmory Oib, a deserted hamlet,

¹ *Archæological Sketches in Scotland*,—Knapdale. Captain T. P. White, R.E.

3 miles north-east of Tayvallich, and half a mile east of the Caol Scotnish head of Loch Sween. With its back against a rocky hillside, the hamlet stands facing Loch Coil a' Bharra, on a shelf raised 90 feet above it and 200 above the sea. But although the loch is not 150 yards off, it is concealed from view by a natural bank at the edge of the shelf.

The approach from the north, leaving the highway near a sharp bend where there is a stone circle, is by a beautiful road of close green turf

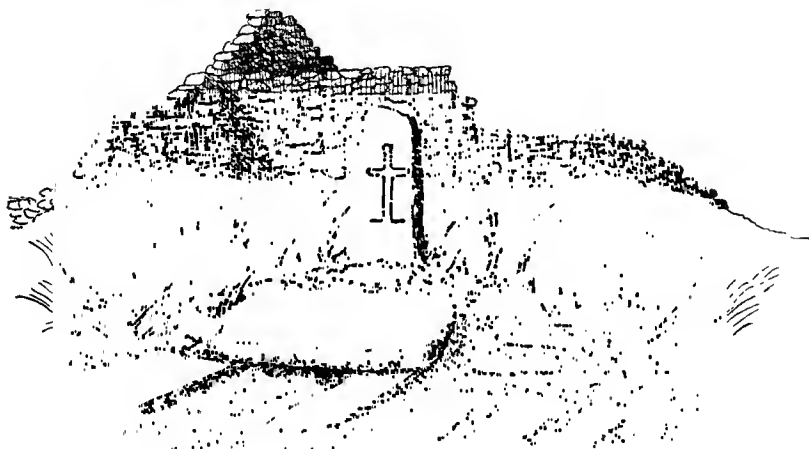


Fig. 15. Cross-slab and Ancient Well, Kilmory Oil.

along the shelf for 500 yards, and the hamlet, standing on a lovely sequestered site, is one of the most impressive of the many sad evidences of a vanished population that I have seen in the Highlands. Over the well the cross-slab still stands (fig. 15), where in all probability it was originally erected many centuries ago, in pious gratitude for the never-failing spring, which still flows abundantly from the square carefully-built well, headed by a massive slab, 6 feet 6 inches long and 2 feet 6 inches wide, laid between the well and the monument. A close level crop of watercress fills the well, the watercourse, and the neighbouring ground,

which must have been wet when the hamlet was inhabited, as stepping-stones lead to the well.

The cross-slab, fig. 14, is 4 feet 3 inches high, 1 foot 3 inches wide, and 4 inches to 5 inches thick. It has a cross on either side, each of which presents some unusual features. The one on the face towards the well is incised, the other on the back is in relief. The peculiarity in the incised cross is that it appears to have three perpendicular lines in the south arm of the cross, close to its outer margin, and three horizontal ones at the foot of the cross, within the shaft, and prolonged beyond it on one side. The horizontal direction of the one set and perpendicular direction of the other, as well as the similarity in depth and width to the incised lines of the cross itself, seem to indicate that these markings are original, and are not natural defects or the result of decay.¹ Seven parallel marks running in an oblique line near the foot of the stone, and a branching or leaf-like set of marks near the top, which come out in the rubbing, do not resemble the cutting of the cross, and are probably the result of decay or accident.

The cross in relief on the back is much worn. Even since Colonel White's freehand sketch was taken, the incised St Andrew's cross on the right side of the raised cross must have become very indistinct, as I did not notice it, and it came out very faintly, if at all, in my rubbing. The only other example of a rudely incised cross saltire among the Early Christian Monuments of Scotland appears to be not far off, at the very ancient burying-ground, *Cladh Bhile*, Ellary, Loch Caolisport, described by Mr William Galloway (*Proc. S.A. Scot.*, xii. 32, pl. iii. No. 4A).

The upper bird on the left of the cross, better preserved than its fellow, is perched on what at first I took to be the bill of another duck-like bird, but this is probably an odd result of decay.

Below the transverse bar, and separated only by a pair of bosses, is

¹ The only analogy to these triple lines that I know of is at Balquhiddy, where three parallel perpendicular lines are incised in the lower right quarter of a rudely incised cross on a slab with a sword.—*Sculptured Stones of Scotland*, pl. lxviii. 9.

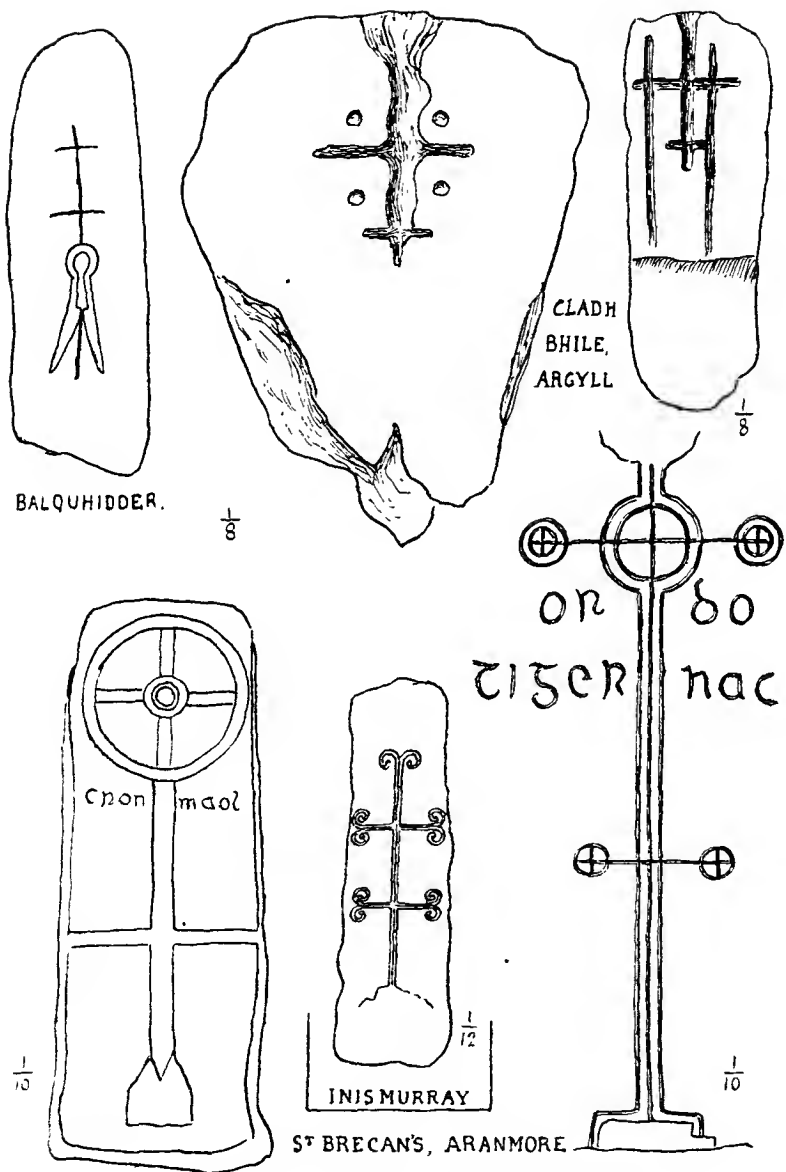


Fig. 16. Scottish and Irish "Patriarchal" Crosses.

apparently a second bar, with expanded ends like the one above. Colonel White took this for a pair of leaves, but they spring from the cross with such a wide flat surface that this seems unlikely. If it be a second bar, it is a unique example in Scotland of a "patriarchal" cross in relief. Three rude incised examples, however, are known, two at *Cladh Bhile* (*op. cit.*, pl. iii. 5B and pl. iv. 9), and one at Balquhiddy (Stuart's *Sculptured Stones of Scotland*, ii., pl. lxxviii. 7). The proximity of the bars does not seem to be an objection to the "patriarchal" theory, as in this respect much freedom was used. I have collected in fig. 16 the three incised Scottish examples, and for comparison the three known in Ireland (*Christian Inscriptions in the Irish Language*, George Petrie, LL.D., edited by Miss M. Stokes).

III. STONE CIRCLE NEAR KILMORY OIB.

This circle, if it may be so called, as it is a well-defined oval, is 500 yards north by east of the sculptured stone and well at Kilmory Oib, about $\frac{1}{2}$ a mile south-west of the farmhouse of Baranloigan, close to a sharp bend in the road on its ascent of the pass to Loch Sween.

A very regular oval space, measuring 65 feet by 42 feet, is marked by a standing stone at each end of the long axis, a row of recumbent stones on the north-west side, and on the south-east side by the well-defined edge of a steep short slope to the marshy flat below, fig. 17. On the north-west side a steep hillside rises up, with a narrow level space between it and the circle. The contained area is slightly and regularly domed, and the whole conformation suggests artificial making-up, although rock crops out on the slope.

The erect stone at the south apex is a curious three-sided block, measuring 5 feet 10 inches round the base, 3 feet 2 inches in height towards the area, and 4 feet 4 inches towards the outside. The opposite one is a flat slab, 9 inches thick, 3 feet 9 inches in height, and 1 foot 9 inches to 2 feet 3 inches in width.

A dense growth of bracken and briars prevented me from surveying the recumbent stones accurately, and they are laid down in the figure only

in a rough way. They are thirteen in number, vary from about 3 to 6 feet in length, and lie generally pretty close to each other. Save one in the area, but near the south standing block, not a stone is to be seen at or near the south-east side.

This circle, if it may be so called, is unique in Scotland, as far as I

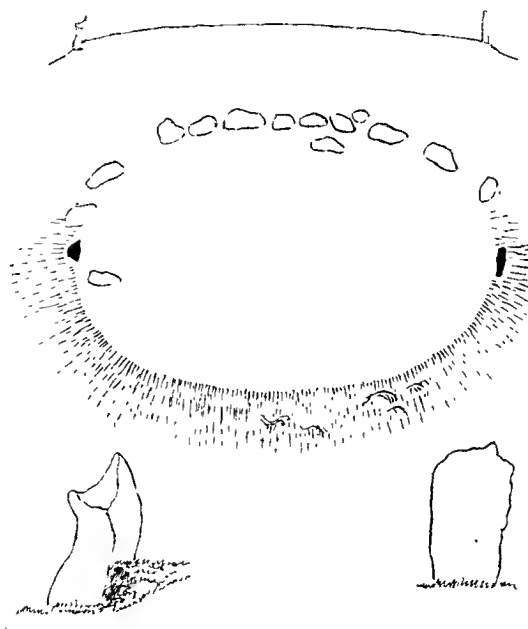


Fig. 17. Stone Circle near Kilmory Orb.

know, in its regular long oval form, and still more unique if the blocks at the apices were originally the only erect ones, as they are now. Whether the south-east side was originally lined by stones like the north-west side must remain doubtful, unless excavation may possibly reveal their beds. It is likely enough that they did exist and have been used up for road metal, as the circle stands temptingly, almost touching the highway.

IV. CUP- AND RING-MARKED ROCKS AND STONES.

The broad and easy path that leads from Lochgilphead by Cairnbaan and the valley of the Add to Loch Crinan must always have been an important line of communication between the east and west coasts of Argyle, and would naturally be occupied from very early times. Hence perhaps there is no other locality in Scotland that displays so many important cup- and ring-markings.

Beginning from the east, the following is a list of those that have already been recorded:—

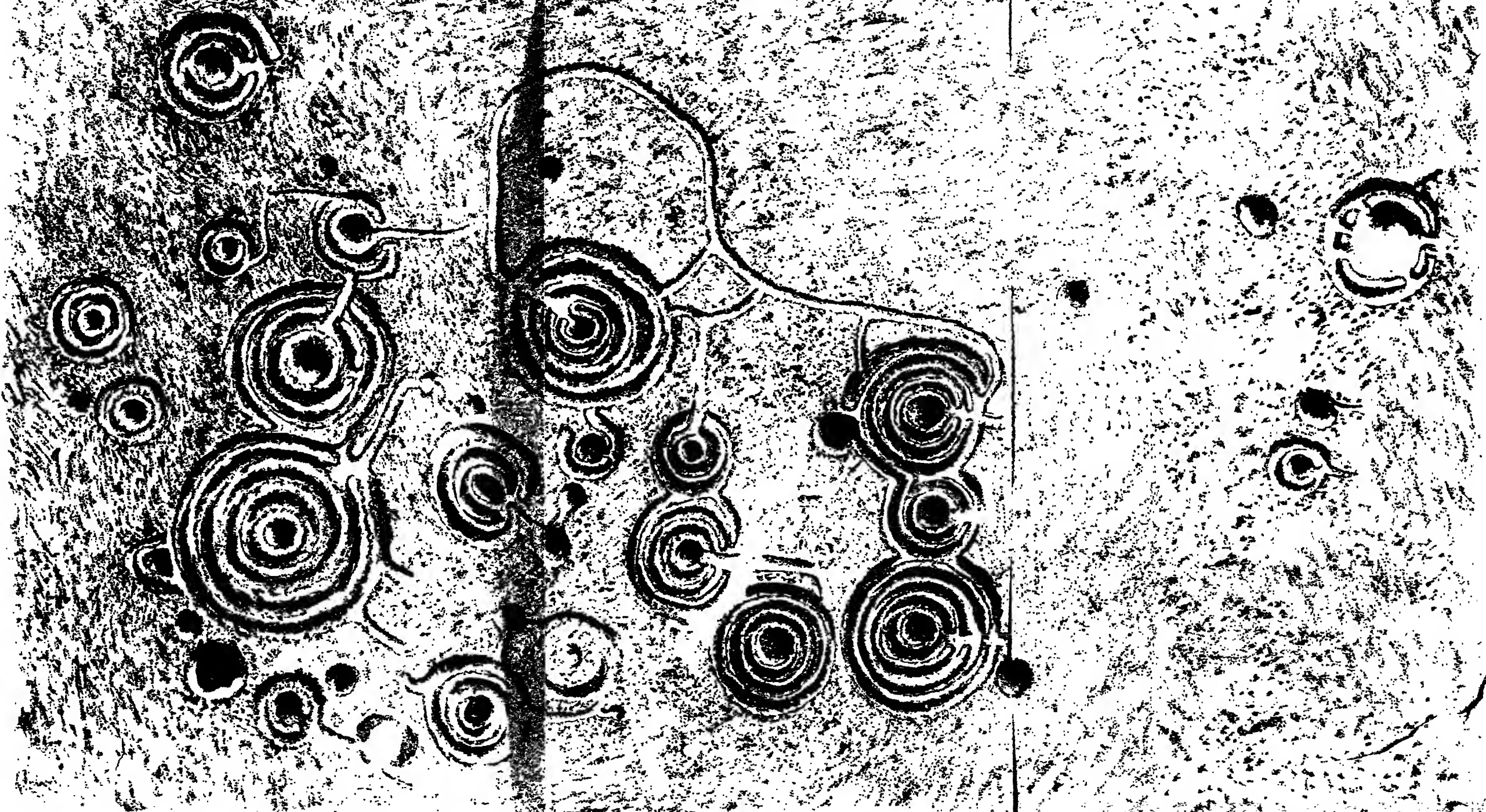
	No.
On Rocks,	1, 2, 3, three separate rocks at Achnabreck.
	4, one at Cairnbaan.
	5, one at Calton Mor (now Poltalloch).
	6, one at Baluachraig, $1\frac{1}{2}$ miles south of Kilmartin.
	7, one at Tyness.
On a Cist Slab,	8, ¹ one at Tyness, on "a sliding panel" of a cist, Cairnbaan.
On Standing Stones,	9, 10, two at Largie, Kilmartin.
	11, 12, 13, three at Ballymenach, Kilmartin.
	14, one at Tor a Bhlarain, Kilmichael Glassary.

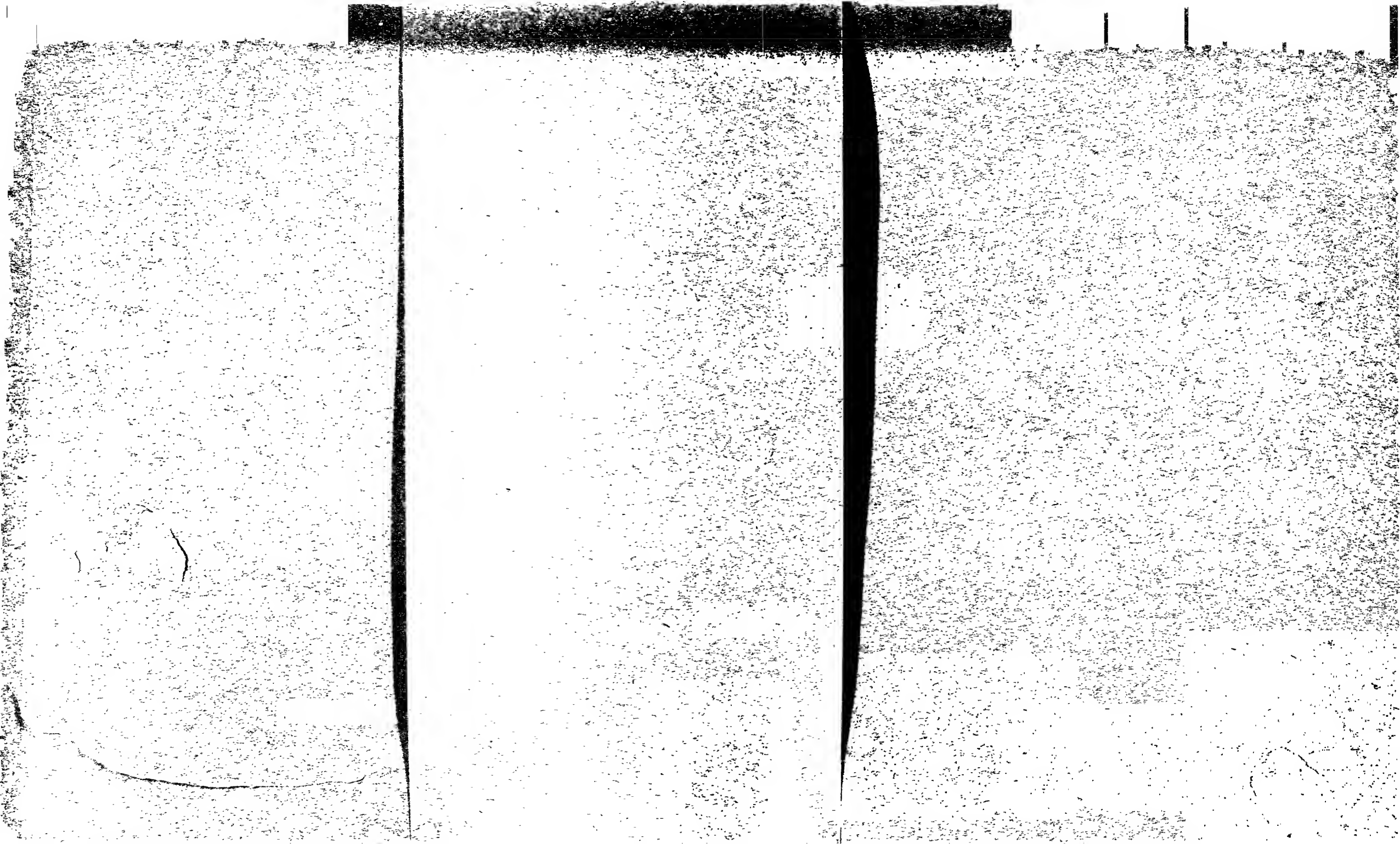
All these except No. 6 were recorded by Sir James Simpson, and he gave complete or partial illustrations of all except Nos. 5, 6, 7, and 14.

Nos. 1, 2, and 7 are completely and No. 4 partially illustrated in *Incised Markings on Stone in Northumberland, Argyle, and other Places*, from drawings made in 1863 and 1864 by direction of Algernon, Duke of Northumberland, 1869.

No. 6 was first recorded by Mr Romilly Allen, and is figured by him, along with 9, 10, 11, 12, 13, in "Notes on some Undescribed Stones with Cup-markings in Scotland," *Proc. S.A. Scot.*, xvi. 79.

¹ Not truly a cup- or ring-marked stone, as the carving is rectangular.





No. 5 was destroyed when first discovered, with the exception of two fragments which may still be preserved at Poltalloch.

The discovery only a few years ago of another rock-set at Kilmichael Glassary by Miss C. S. Campbell adds a 15th to the list. This and No. 14 are illustrated for the first time in the present paper, and I also give the Cairnbaan Rock, as my rubbings of it show details not given in Sir James Simpson's plate.

To produce my illustrations, the rubbings were copied on one-fourth of the scale, by measurement on paper ruled in squares. The drawings were studiously compared with the rock-markings, which should always be done, as details that do not come to the surface may be missed in the rubbings, and, on the other hand, the rubbings may prove apparent cups to be due to weathering. Finally, the drawings were reduced about one-fourth in the figures.

CUP- AND RING-MARKED ROCK AT CAIRNBAAN. (PLATE I.)

The rock lies 300 yards north by west of Cairnbaan Inn, on a level bit of moorland east of the disused slate quarries. As it does not rise above the grass and heather, it is not easily found, except by noting its position on the Ordnance map. The rock slopes gently in the long direction of the sculptured space, which measures 9 feet by $5\frac{1}{2}$, but the mass of the carvings is in the upper 6 feet by $4\frac{1}{2}$. There are in all 16 simple cups and 21 ringed cups, of which only 2 simple cups and 2 single-ringed cups are appropriated by the detachment at the foot. Sir J. Simpson's plate shows another simple cup and a one-ringed cup, detached a foot from the main set to the left, but these are now overgrown with turf. The cups are from 2 inches to 4 inches in diameter. The ringed cups have from 1 to 4 concentric circles, and the figures thus formed vary from 5 inches to 14 inches in diameter.

A certain degree of order, and particularly a tendency to an arrangement by threes, can be made out. Near the top are three ringed cups in line, diminishing in size to the right, and attached to each other, the

first to the second by intersecting it, the third to the second by a very short channel.

Below these are three others nearly in line, but widely detached from each other. Further down, three ringed cups are connected by intersections of the rings, and so are the lowest three of all, which, although almost touching the three above, are not connected with them either by intersection or by channels.

Possibly all the cups and circular figures were originally connected by channels, because, as the latter are quite shallow, they wear out sooner than the much deeper cups. Even now, with the exception of one or two breaks due to cracks in the rock, all four rows are connected with a channel, which, for no apparent reason, unless to include a solitary outlying cup, takes a wide sweep over the unsculptured part of the rock to the right, and returning inwards, ends in the outer ring of the lowest right-hand figure. A long straight duct, shown in Sir James Simpson's plate, running down on the left from the main set towards the detached few at the bottom, I could not see.

Of minor details the most noticeable are : a small triangular annex at the top of the left-hand upper circle ; a hooked annex to the right-hand circle of the second row ; and in the same row, the form of the middle figure, where the two encircling grooves nearly unite below, but are cut off by ridges both from each other and from the central duct, which itself is cut off from the cup.

CUP-MARKED ROCK AT KILMICHAEL GLASSARY. (PLATE II.)

This example, discovered a few years ago by Miss C. S. Campbell, of the Manse, and only completely uncovered during my stay at Cairnbaan last autumn, lies about 100 yards from the church, on the opposite side of the road, on the old site of the village. The rock is partially subdivided into three parts by two clefts, but not so as to disconnect the parts entirely. This has apparently led, however, to the sculptures being arranged in three divisions, which, although they might have been connected, are not so, and each division has characteristics of its own. The



CUP MARKED ROCK AT KILMICHAEL-GLASSARY.

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three sets run parallel to each other from south-south-west to north-north-east, and the rock, nearly level at the upper or north-west side, slopes gently in the middle to the south-east, ending with a steep fall from the lower margin of the cup-markings.

The Upper Division occupies a nearly level space of 8 feet by 2 feet. It contains—

- (1) Nineteen detached circular or oval cups, from $1\frac{1}{2}$ inches to 6 inches in diameter.
- (2) Two pairs of cups, each united by a shallow groove.
- (3) A pear-shaped figure, 11 inches by 8 inches, outlined by a groove, with a cup in the body of the pear, and a Minie-bullet-shaped flat boss in the neck.
- (4) Another, $8\frac{1}{2}$ inches by $5\frac{1}{2}$ inches, containing a round flat boss, with a long tongue-like projection.

The Middle Division, on a surface of 8 feet by from 1 foot to 2 feet 4 inches, contains—

- (1) Fifty-one detached circular or oval cups, 1 inch to 7 inches in diameter.
- (2) Two very elongated ovals and one broad curved hollow.
- (3) One cup with a blind projection.
- (4) A row of seven cups connected by a groove and two cups connected by two grooves.
- (5) Seven cups connected with other figures.
- (6) Six “dumbbells.”
- (7) A large cup, nearly surrounded by a groove ending in small cups.
- (8) One cup and ring.

The Lower Division, on a space of $10\frac{1}{2}$ feet by 3 feet greatest breadth, contains—

- (1) Twenty-nine detached circular or oval cups, 1 inch to 6 inches in diameter.
- (2) Thirteen cups attached to each other or to other figures.
- (3) Eight pear-shaped or tongued figures.

- (4) Connected with one of them, a complex figure consisting of two oval spaces, enclosing or intimately related to eight small cups.
- (5) One ringed oval cup.

On the whole carved surface of the rock, the number of cups, detached, attached, and central, is 154, exclusive of two long oval excavations, and a broad curved one, and the cup-shaped ends of the dumbbells.

Of "dumbbells" there are six, and of pear-shaped or tongued figures ten.

In two of the latter the centre is not a cup, but a flat boss.

Whether by accident or intention, the carvings are sometimes so placed as to form complex designs. In the middle division there is the large cup, surmounted by a groove cupped at the ends, suggestive of a judge's head and wig, with an irregular ring of cups encircling the whole.

In the lower division three cups, whose rims have projecting tongues, are connected as a tripartite and much-channelled figure.

In the same division is the complex figure (4 in the list), which almost defies description.

Of concentric circles there are none, and even the simple circle can hardly be said to exist, except in one rather doubtful instance, at the left-hand bottom corner of the middle division, where the carving is much worn and partially erased. The tongue-like figures are indeed surrounded by grooves, but they are not circular, and their *raison d'être* seems to be to define the figures.

Characteristics of the three Divisions.

The upper set is extremely simple, consisting almost entirely of detached cups with two pear-shaped figures.

In the middle set are no pear-shapes, but the "dumbbell" is introduced, and there is the complex "wigged" figure. The channel is very scantily represented.

In the third division the "dumbbell" is absent, but the "pear" or "tongue" reappears, and we have the tripartite tongued figure and the other indefinable design.

In the southerly half of this division channels continue to be almost absent, but in the northern half they abound, tending ultimately to run out at the edge of the steep fall in the rock to the east

“Dumbell” Figures.

The dumbell or spectacle-like figure, proceeding from the junction of two cups by a channel or groove, is not uncommon in the Rock Sculptures of this country and the Continent. Sometimes it is represented as if, besides the surface resemblance, a second “dumbell” was sunk in the floor of the cavity, and I thought this was the case in one of those at Glassary, but it proved to be a deception, due to a sediment, and disappeared when the sediment was cleared out. In one of the Glassary examples both cups are deeper than the connecting groove. In another, only one cup is so.

Pear-shaped or tongued Figures.

In some, the tongue is a groove protruding from the cup, and in one of these a little oval boss occupies the tip of the tongue. In other cases the tongue is a solid projection from the rim of the cup. In two, the centre, instead of being a cup, is a boss, from which the solid tongue proceeds. These bosses are flat, and are simply the original rock surface left undisturbed, and defined by a groove. As far as I have observed, such tongued figures have not hitherto been recorded anywhere else, at home or abroad.

The Ducts or Channels.

The ducts or channels, both in the Cairnbaan and Glassary rocks, are not more than from a quarter to half an inch in depth, whereas the cups and rings average from 1 to 3 inches in depth. The ducts, therefore, could only serve as drains for the cups and rings to a very superficial extent. Moreover, the cups and rings are often purposely blocked where they join the ducts. Yet it is natural to regard them as drains, because they always tend to run in the direction of the downward slope of the rocks.

GENERAL REMARKS.

It is not my purpose to discuss the theories that have been started as to the origin and meaning of the mysterious and widely-spread cup-markings on rocks and stones, but I would merely point out the difficulty of reconciling with any one theory two sets of carvings so utterly different, although locally so near each other, as those of the Cairnbaan and Glassary rocks. If we take the ideographic theory, for example, the one set is apparently a totally different script from the other. I should like also to notice the danger of generalising, when a new discovery may at once upset conclusions that seemed warrantable enough. The seven sculptured rocks previously known in the Crinan district were all of the cup and ring type, but the newly found Glassary rock is of the cup type. Lastly, I may observe that the absence of traditions or legends concerning the cup-marked rocks, among a people so given to legends as the Highlanders, seems somewhat remarkable. Single marks, such as those said to have been made by the foot and knee of Ossian when he landed in his famous leap of a mile from Rudale to Dunadd, may draw legends around them, but even the imaginative mind of the Gael seems to have been unable to devise a legend that would fit the collected masses of cups and rings, and this apparent absence of any trace of a connection between them and his race may perhaps be regarded as a proof of their remote origin.

MONDAY, 8th February 1904.

ROBERT MUNRO, M.D., LL.D., Vice-President, in the Chair.

A Ballot having been taken, the following Candidate was duly elected a Fellow of the Society:—

Mr JOHN WATSON, Architect, 25 Frederick Street.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—



Fig. 1. Bead from Loch Ronald. (1)



Fig. 2. Bead from Camelon. (2)

- (1) By the Right Hon. SIR HERBERT MAXWELL, Bart., M.P.,
President.

Bead of Vitreous Paste, with yellow spots (fig. 1), found at Loch Ronald, Kirkeowan, Wigtownshire.

- (2) By ROBERT BEATSON, Camelon.

Bead of Blue Vitreous Paste (fig. 2), having white spots with blue centres, found in the South Camp, Camelon.

Small Altar of Grey Sandstone, uninscribed, 15½ inches high, found at Camelon.

- (3) By A. W. JOHNSON, F.S.A. Scot.

Midrib of a Bone Comb, ornamented: and a plain Bone Handle of an Implement, with a hole for the tang, found in excavating near the

Round Church of Orphir, Orkney. (Figured in the last volume of the *Proceedings*, p. 24.)

- (4) By D. FRASER, Lochawe Hotel, through Rev. JOHN McLEAN, Grandtully, F.S.A. Scot.

Slender Whetstone of Quartzite (fig. 3), 5½ inches in length, found in excavating near Lochawe Hotel.

- (5) By Professor G. BALDWIN BROWN, F.S.A. Scot.

The Arts in Early England. By G. Baldwin Brown, M.A., Watson-Gordon Professor of Fine Art in the University of Edinburgh. 2 vols. 8vo. 1903.



Fig. 3. Slender Whetstone of Quartzite found near Lochawe Hotel. ¾.

- (6) By ERSKINE BEVERIDGE, F.S.A. Scot.

Coll and Tiree: Their Prehistoric Forts and Ecclesiastical Antiquities, with Notices of Ancient Remains in the Treshnish Isles. By Erskine Beveridge, Author of *The Churchyard Memorials of Crail*, etc. 4to. 1903.

- (7) By Rev. W. A. STARK, F.S.A. Scot.

The Book of Kirkpatrick-Durham, Kirkcudbrightshire. By the Rev. William A. Stark, Minister of the Parish. 8vo. 1903.

- (8) By ALAN REID, F.S.A. Scot.

The Royal Burgh of Forfar: A Local History. By Alan Reid. 8vo. 1902.

Linkekilns and Charleston: A Historical and Descriptive Sketch of a Notable Fifeshire Neuk. By Alan Reid. 8vo. 1903.

(9) By WILLIAM J. HAY, *John Knox's House*

A Handbook and Directory of Old Scottish Clockmakers from 1550 to 1850. Compiled from Original Sources, with Notes by John Smith. 8vo. 1903.

(10) By Professor A. R. S. KENNEDY.

The Money of the Bible. (Reprint from the *Encyclopædia Britannica*.) 15 pp. and Plate.

The following Communications were read :—

I

TEMPERA-PAINTING IN SCOTLAND DURING THE EARLY PART OF THE SEVENTEENTH CENTURY. By ANDREW W. LYONS.

This very quaint style of decorative painting, so prevalent throughout Scotland from the beginning to the middle of the seventeenth century, seems to have been the outcome of a "craze," among the greater number of those members of the nobility and gentry who were in possession of baronial residences, to decorate the roofs of their principal apartments.

Most of these tempera-painted roofs are to be found in castles, palaces, mansion-houses and towers, or small churches, as may be instanced in the Montgomerie Aisle, Largs Church, Ayrshire, and St Mary's of Grandtully, Perthshire, which after disuse for worship were renovated with a view to utilise them—as they did—by converting them into mausoleums for those gentlemen and their spouses who were responsible for the interior decorations under their direct personal supervision, and during their own lifetime.

All these painted chambers bear some evidence, either by dates, armorial bearings, badges, or ciphers, of having been executed after the Union of the Crowns in 1603.

Although much of its execution is scarcely equal to its inspiration,

yet the work, generally speaking, is exceedingly good, its characteristic features being simplicity and breadth, and what may be termed "fearless" treatment both in design and execution all through. A few examples, however, lack that feeling which is looked for, and is most certainly to be found, in all work designed and executed by the same artist. "Purely decorative" may best describe such work, although much more interest is to be had while viewing those in Pinkie House, Largs Church, St Mary's of Grandtully, and Nunraw.

Many more, finer examples probably, must have existed throughout the country, but these, unfortunately, have now disappeared from view, no doubt partly through utter neglect, while several, beyond dispute, have had the misfortune of falling into the hands of the destroyer, as in the case of Greyfriars Priory, Elgin, where in 1897 the late Marquis of Bute was carrying out very extensive restorations.

While the different apartments in that building were being gutted, the lathing underneath the plaster-work was observed to bear apparent traces of decorative painting, many parts being as fresh as when first painted. The plaster was very carefully removed, the lathing taken down and pieced together,¹ with the good result that many excellent notes were obtained, proving very conclusively that more than one ceiling had borne most elaborate decoration, embracing pictorial scenes, figure-work, delicately painted, and dressed in costumes of James VI. and Charles I.'s time, and other panel ornamentation enriched with gold-leaf.² The walls of one of these rooms had evidently been decorated with pilasters, dado-moulding, and panelling. Very little remained, however, to indicate the extent to which it had been carried out, although the sketch taken of what still remained of one of the painted pilasters reveals clearly the character of the work. It was the intention of the Marquis of Bute to restore these paintings, but owing to the lamented death of his lord-

¹ These were pieced together by the writer, and left in one of the rooms when the work was discontinued, and may still, I believe, be seen there.

² Pinkie House and Falkland Palace are the only other two buildings having examples of this work where on gold-leaf is used.

ship shortly afterwards, the restoration of this most interesting piece of decorative painting was never carried into effect.

Some of the decorative painting in Culross Palace, Clackmannanshire, has also met a somewhat similar fate—not quite split up and used as lathing, but it has been taken down from the original positions and stored away in a side apartment of the building. These removed portions of painted-timber lining may still be seen. The reason given for this act of destruction was: “It prevented any notes or sketches being taken of the work.”¹ Owing to the great difficulty in trying to obtain sketches here of any of the work, a passing glance indicated that a barrel-vaulted apartment had its ceiling lined with wood having its entire surface divided into sixteen rectangular compartments by painted bands, all very sorely faded, each containing quaintly drawn figure-subjects, with quotations lettered underneath.²

A great many of these ceilings are very much faded. Although much of the colouring is obliterated, the outlines were more easily traced, enabling careful water-colour drawings to be made; but to make the nature of the work more clearly understood, the water-colour drawings—correct in every detail—taken from the best known surviving examples, are slightly richer than the paintings as they now appear.

ABERDOUR CASTLE, FIFESHIRE, 1636.

The room containing this painted ceiling is on the first floor in the S.E. wing of the building. At present it is used as a kitchen with bed-recess and small pantry. Originally, however, it has been one single apartment: the partitions are of a more recent date, and have only been erected for a less important use.

The plan of the original apartment is almost square, measuring 15 feet

¹ This remark was made to the writer by the lady occupant, from whom permission was being asked to allow drawings and notes to be taken. Every solicitation proved of no avail, even although on one visit Lord Bute gave me authority to use his name.

² Nine of the painted compartments of the wooden ceiling at Culross Palace are given from coloured drawings by Thomas Bonnat and G. Waterston, jun., in the Architectural Association's *Sketch Book*, vol. iii. 1880-82, pl. 50.

6 inches by 15 feet, while the portion now exposed, revealing the painted roof, is 15 feet 6 inches by 10 feet 7 inches, the other parts still remaining covered with plaster.

The roof is of timber, and is divided into eight long compartments by cross-joists (fig. 1), each of which has its sides and face subdivided by yellow painted bands into several oblong blue panels bearing in their centres a small light-coloured ornament with a red heart—the charge of the Douglas family—introduced at either end of the design, enclosed by square and bevelled ends alternately. The surface of each large compartment is completely covered with very quaint and broadly painted decoration, embracing all manner of curious ornamentation—fruit, foliage, mouldings, and grotesques—painted in red, green, yellow, blue, and white on a black background.¹

In another apartment, now used as a hay-loft, a painted door,² divided into panelling, clearly indicates that decorative painting must have been carried out very extensively in other parts of the building.

Everything points to this, and other carved decoration in stone, having been executed for, and during the lifetime of, William Douglas, eighth Earl of Morton, who died in 1648.

COLLAIRNIE CASTLE, FIFESHIRE, 1607.

This building is now in a very dilapidated condition. The first drawing (fig. 2) shows the painted roof in the room on the second flat. It has a plan of 14 feet 2 inches by 13 feet 10 inches.

It is divided into seven long compartments by cross-joists, each with its sides and face subdivided into three long panels by yellow painted bands and red lines, with a light-coloured scroll ornament filling the entire centre surfaces, painted on red or black grounds. Two small circles are formed, by the interlacing of these yellow and red bands, on

¹ The only remaining example of this work having its entire background painted black.

² All that now remains.

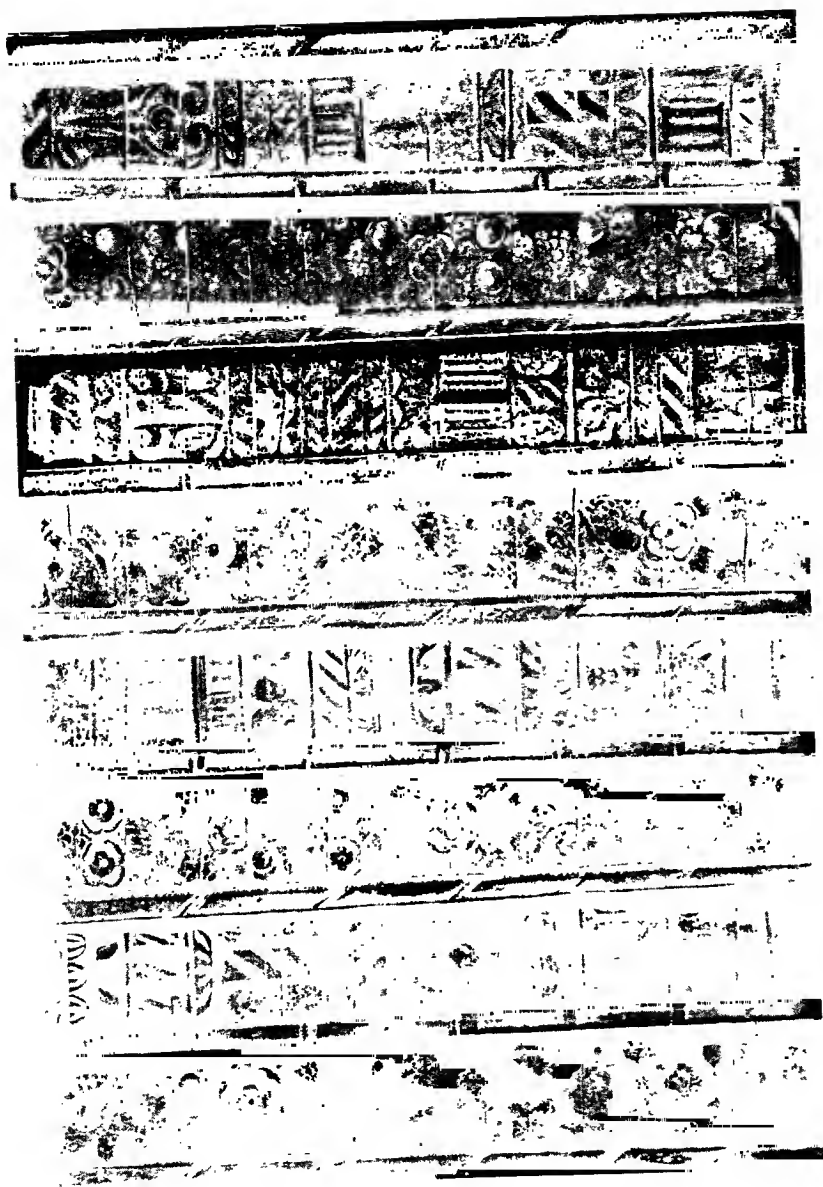


Fig. 1. Tempera-painted Ceiling at Aberdour Castle, Fifeshire, 1636. (Drawn by A. W. Lyons.)

each beam, containing the initials H.B. and D.B.¹ lettered in white on a blue ground.

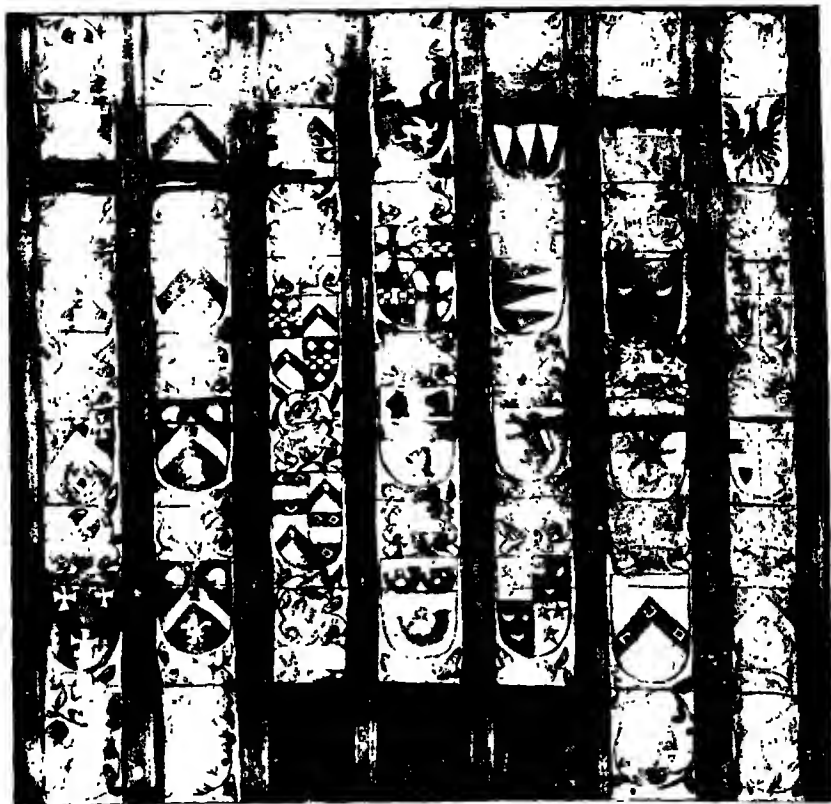


Fig. 2. Tempera-painted Ceiling in second flat of Collairnie Castle, Fife, 1697.
(Drawn by A. W. Lyons.)

The panels on the sides of these joists bear different quotations, sorely defaced and scarcely readable, in black German text, showing exquisite and exceptionally free pencil-work, lettered on a white ground.

¹ Initials of Hugh Barclay and David Bethune of Balfour, in the county of Fife.

The surface of each principal compartment is embellished with four large plain escutcheons charged with armorial bearings of different

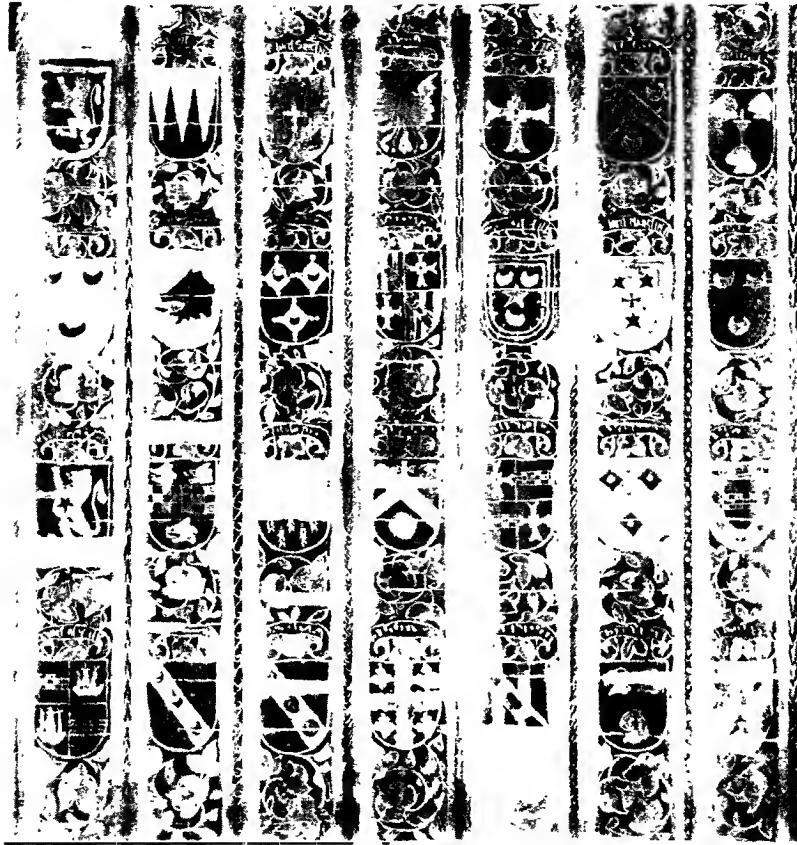


Fig. 3. Tempera-painted Ceiling in third flat of Collairnie Castle, Fifeshire, 1607.
(Drawn by A. W. Lyons.)

families, whose name or title is lettered above each shield in black, on a white ribbon, shaded with blue.

The intervening spaces between each coat-of-arms are filled in with a

bold and freely painted floriated design in semi-natural tints outlined with black on a white ground.

The drawing reproduced in fig. 3 shows another painted roof in the room on the third flat, immediately above the last, in the same building. It has a plan of 14 feet 9 inches by 14 feet, and is similarly divided and enriched to the one already referred to, except that the shields bear different charges, and the beams are decorated with different designs.

FAULKLAND PALACE, FIFE-SHIRE, 1633.

The Chapel Royal in Falkland Palace is 65 feet long by 25 feet broad. It has a long and deeply moulded roof, lined with oak¹ and divided into several differently shaped compartments (fig. 4), each of which is embellished with cartouche framework, imperial crowns, the English and Scottish crests, and other national badges, with the ensigned mitrals of Charles I., and those of his consort, Maria (Henrietta Maria), daughter of Henry IV. of France.

The crowned armorial bearings of King Charles are fully emblazoned on a wooden escutcheon planted and fixed on the centre of the ceiling over the intersecting mouldings. There are also painted on the roof St Andrew's Cross, St George's Cross, an ensigned portcullis, and the badge of Charles, Prince of Wales, afterwards Charles II. The work is similar in many points to that seen in Holyrood Palace.

A frieze, 6 feet 6 inches deep, is formed on two sides of this long apartment by timber lining having its entire surface decorated with upright panels containing thistle designs painted in yellow on a blue ground, enriched by royal crowns and monograms in gold.

Between these upright panels, in each division, there is a smaller oblong cartouche containing scriptural texts² lettered in gold on a black ground. These are connected to the larger panels by clusters of fruit suspended from ornamental brackets. In addition to these, on one side

¹ With the exception of four central panels which are entirely covered with red and gold and green and gold decoration, the real oak, exposed as background, is unpainted.

² Mostly taken from Psalms.

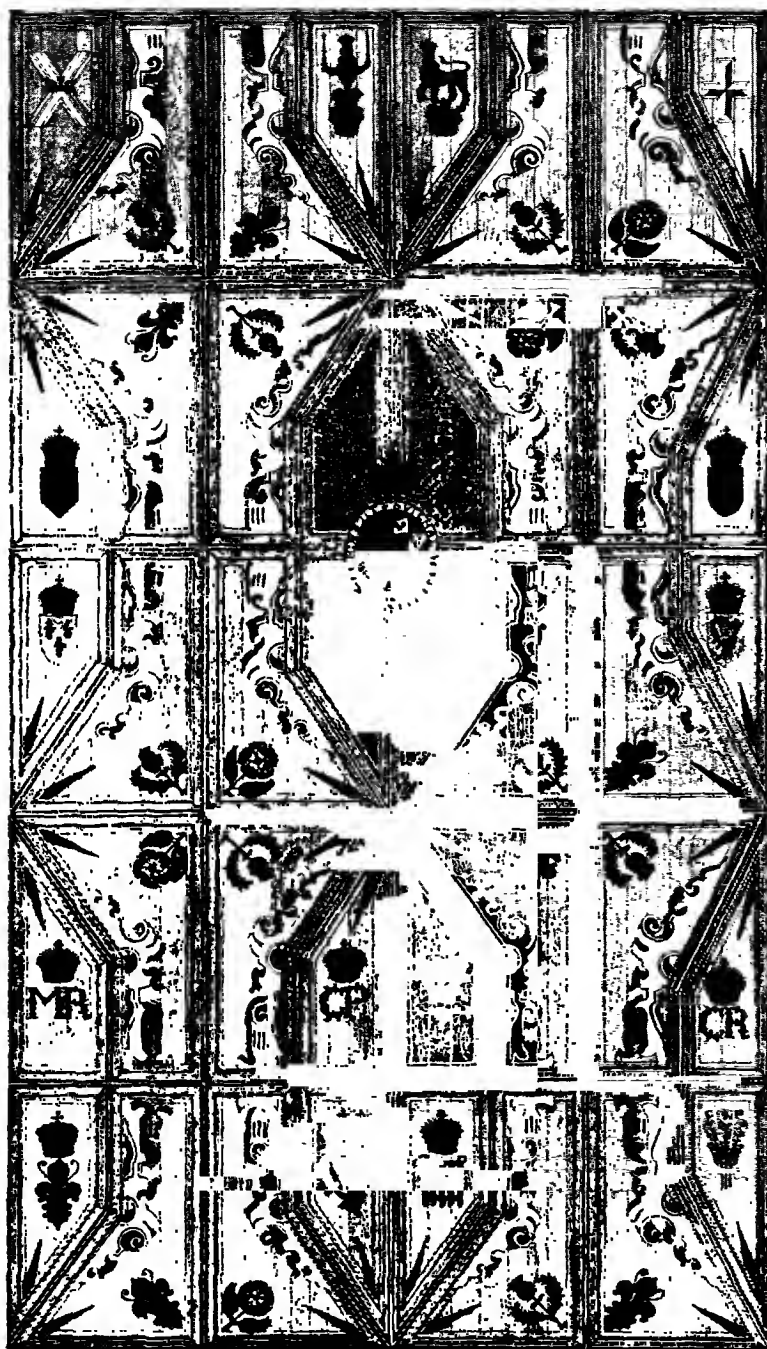


Fig 4. Tempera-painted Ceiling in Falkland Palace, Fife-shire, 1633.
(Drawn by A. W. Lyons.)

of the chamber only and underneath the cartouche panels, the upper portion of a double-latticed window is painted, showing an Elizabethan strap-work soffit drawn in perspective, with lunettes and scotIONS. A small cartouche panel in the centre of the frieze bears the date A.D. 1633. The most of the painting is sorely obliterated, especially that on the frieze, but careful drawings were made afterwards, showing the ceiling and that portion of the frieze traced out and restored for Lord Bute in 1896.

EARLSHALL, FIFESHIRE, 1620.

The ceiling in the gallery is elliptically shaped, and lined with timber having its entire surface covered with decorative painting in black and white. It has an extended plan of 51 feet long by 24 feet wide, and is divided by dark-grey painted bands into many compartments, giving 218 square and circular panels, with the spaces between enriched by scroll and flower ornamentation, as shown in fig. 5. With the exception of thirty of these which are unpainted, each panel contains either armorial bearings, or some quaint representation of different animals.¹

One circle-panel bears a representation of two human hearts interlacing each other, containing, within, the initials W.B. (William Bruce) and D.A.L. (Dame Agnes Lindsay), flanked by the date 1620.

Underneath the painted ceiling on the side walls a frieze is formed by a series of arcading resting on very quaint three-sided pillars in black on a white ground, with some of the inner spaces between these pillars bearing old Scottish quotations, such as :—

“Try and then trust
Efter gude assurance
Bot trust not or ye try
For fear of repentance ;

and

“Give liberalye to neidful folke
Denye nane of them all
For litle thou knouest heir in this lyf
Quhat chaunce may the befall.”

The decoration was restored for R. W. R. M'Kenzie, Esq., in 1892.

¹ A drawing of part of this ceiling by Thomas Bonnar is given in the Architectural Association's *Sketch Book*, vol. ii. (1887-94), pl. 21.

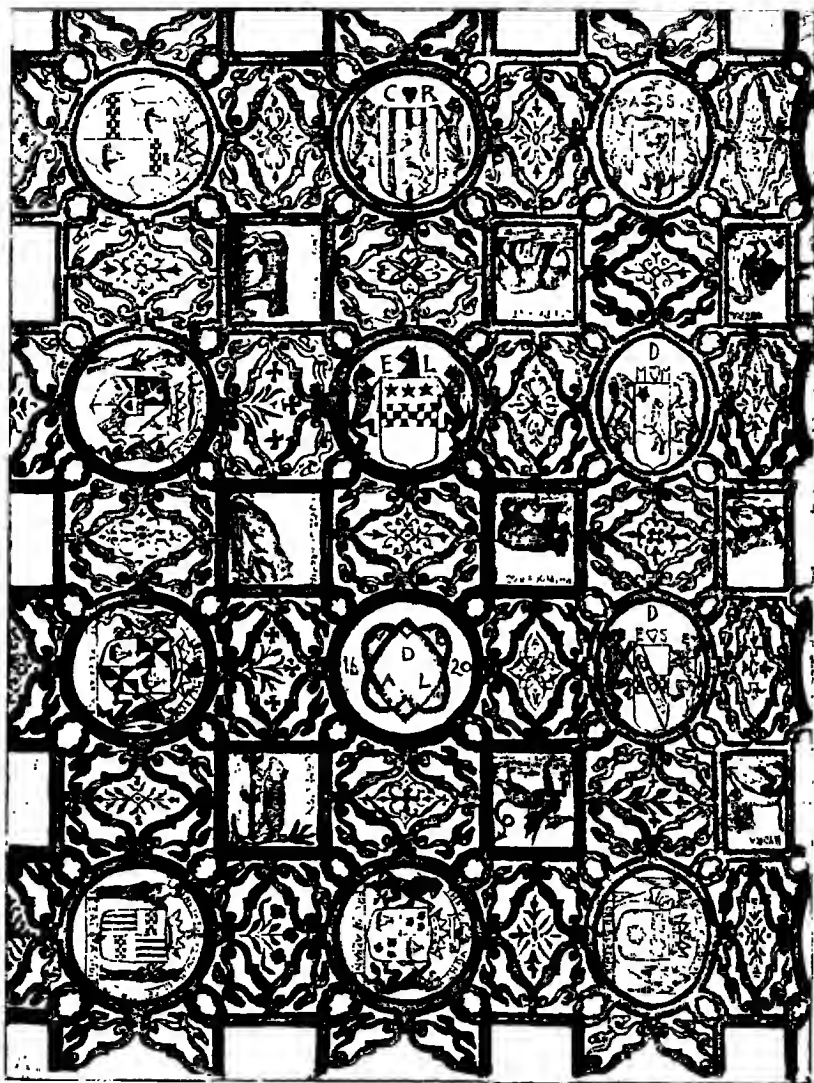


Fig. 5. Tempera-painted Ceiling at Earls Hall, Fifeshire, 1620. (Drawn by A. W. Lyons.)

STOBHALL CASTLE, PERTSHIRE, 1633.

The roof in the chapel is 22 feet long by 16 feet 9 inches broad. It is divided into five long compartments by cross-beams, each of which has one plain panel, enclosed by yellow painted bands, on its face, while the inner panels on the sides of the beams contain different kinds of scroll ornamentation.

A portion in the end division of the roof has been removed to allow the original Gothic gable window to be seen in its entirety. This part of the ceiling has been placed on the end wall, forming a frieze over the



Fig. 6 Part of the Tempera-painted Ceiling at Stobhall Castle, Perthshire, 1633
(Drawn by A. W. Lyons.)

doorway (fig. 6), with the large ornamental panels at either end, and the armorial bearings, with supporters, of the Drummond family (the Earldom of Perth), surmounted by an earl's coronet, in the centre. The surface of each compartment is subdivided into several panels, of different shapes and sizes, by yellow bands outlined with black on a white ground. Three rectangular panels on each of these divisions contain a very quaint coloured ornamentation similar to that on the frieze, but smaller (fig. 7). The arch-top panels at either end have paintings of various kinds of animals. The two larger central compartments in each division contain representations of different kings, fully dressed in their royal robes, sitting on horseback; one is seated on an elephant. A brightly painted checkered border encloses the entire roof.

The painted ceiling is of a much later date than that of the original chapel building, so that when the roof was put up the Gothic window appears to have been built up and plastered over, the present ceiling



Fig. 7. Part of the Tempera-painted Ceiling at Stobhall Castle, Perthshire 1633
(Drawn by A. W. Lyons.)

cutting straight across its centre. This plastering was again removed some years later, and a portion of the roof cut away as already referred to.

The decoration was restored in 1858 by James Robertson, Perth, as certified by an inscription on the side of one of the beams.

THE CHURCH OF ST MARY, GRANDTULLY, PERTSHIRE, 1636.

This little church, not now used, except as a tool-house, has no exterior architectural pretensions. A portion of the raftered ceiling in the interior is barrel-vaulted and lined with wood having its entire surface enriched with decorative painting (fig. 8). It has an extended plan of 25 feet 10 inches long by 23 feet broad, with the boards in three different lengths and of various widths, enframed at one end by a narrow light-coloured "wave" border painted on a black ground.

The spandril space at the end, above this border, facing inwards, bears the arms of the Stewart family, surmounted by the letter "S" encircled by a three-leaved garland, flanked by scrolls.

There are twenty-nine compartments—chiefly circular—on the ceiling, each of which contains either scriptural subjects, armorial bearings, or monograms. These divisions are all connected by bands, lines, cartouche-work, and other ornamentation, the intervening broken surfaces being enriched with clusters of fruit, vases holding flowers, quaintly drawn figures and birds, painted in red, yellow, green, black, and white on a light-tinted ground.

The six lower compartments on either side contain scriptural subjects, each with different suitable texts lettered around them in white Roman letters on a red ground. Four oval compartments, two on either side, in the second row bear paintings of the four Evangelists, St Matthew, St Mark, St Luke, and St John. Four similarly shaped panels, two on either side, in the same row contain the armorial bearings of (1) Dam Agneis Monerief, (2) Earle of Atholl, (3) Duke of Lennox, and (4) the Laird of Graintuellie.

Four large circles, two on either side, are embellished with escutcheons, having supporters, charged with the armorial bearings of (1) Great Britain, surmounted by the English crest; (2) Great Britain, surmounted by the Scottish crest; flanked by the four badges, viz.: (1) rose, (2) crowned thistle, (3) fleur-de-lis, and (4) the portcullis of Westminster. The third and fourth panels are sorely defaced, but sufficient

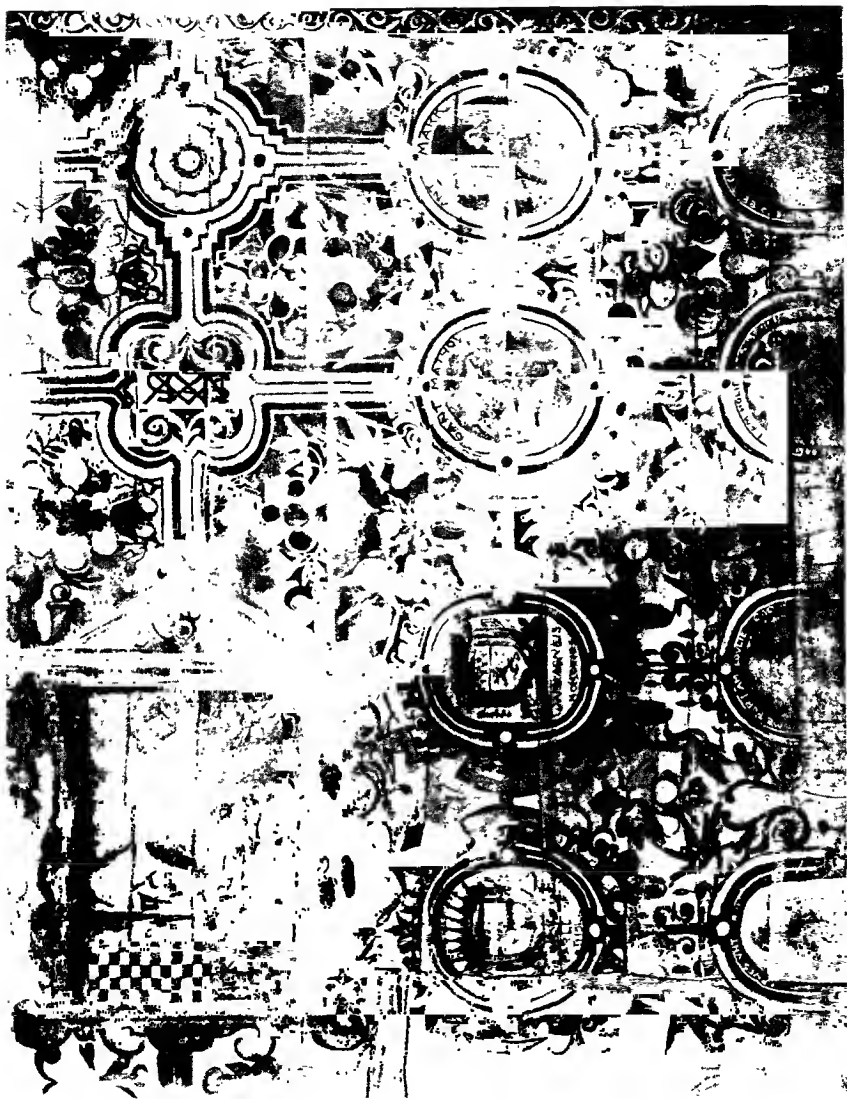


Fig. 8. Tempera-painted Ceiling in the Church of St Mary, Grandtully, Perthshire, 1636. (Drawn by A. W. Lyons.)

still remains in outline to indicate that the shields bear some French ducal charge, one having dolphins as supporters, while the other appears to have some different animals of a similar kind supporting it.

In the top and middle row, at the extreme ends of the ceiling, two small circles contain (1) a representation of the moon and starry firmament enclosed by a double engrailed border, and (2) the sun in all its meridian splendour.

The two inner quatrefoil-shaped compartments bear the interlaced monograms of Sir William Stewart and those of his wife, Dame Agnes Moncrieff.

The large architectural panel in the centre of the ceiling, though quaintly executed, is a beautiful finish to a fine piece of decorative design. The framework of the panel is very richly decorated with cartouche ornamentation, having an ornate pediment supported by two columns, around which there twine clusters of the vine, while the inner surface of the panel itself bears a painting of the Day of Judgment, the graves giving up their dead, the redeemed ascending, and the condemned falling into eternal night.

BALBEGNO CASTLE, KINCARDINESHIRE.

This lofty apartment has a groined roof, stone-built, with a ground plan of 29 feet 6 inches long by 19 feet 6 inches broad, and a rise of between 9 and 10 feet (fig. 9).

It is divided into sixteen triangular compartments by deeply-moulded stone ribs resting on and springing from six stone-carved corbels, and having carved bosses planted over the three central points of intersection. The small boss in the centre is a circular rosette; the larger one overhead bears an escutcheon charged with the arms of Scotland ensigned with a royal crown; the similar one underneath also bears a shield, having what appears to be a savage carved on its field.

Each member of the stone ribs is enriched with Gothic trefoil, balls and pearl, and guilloché decorative border-work in red, green, and white, outlined with black.

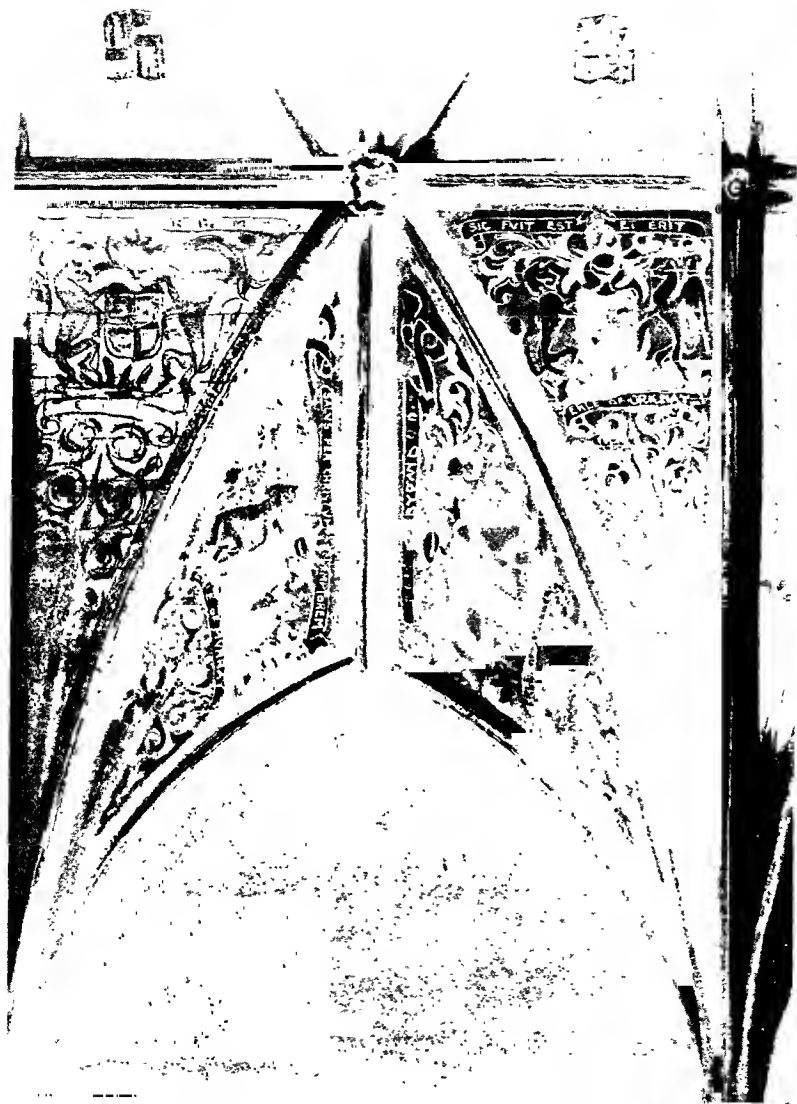


Fig. 9. Tempera-painted Ceiling of Gabled Roof in the Dining Hall, Balbegno Castle, Kincardineshire. (Drawn by A. W. Lyons.)

The surface of each compartment is elaborately painted with scroll ornamentation, pierced by a "sun-ray" centre from the bottom angle of the yellow band, which encloses the complete panel, bearing on its face a narrow red-coloured guilloche border separated from the ground surface of the compartment by a black line. The top portion of each compartment is greatly enriched by the fully charged armorial bearings of some Scottish earl, with crest and motto, over the shield, and their respective titles lettered underneath in black, on white ribbons.

CESSNOCK CASTLE, Ayrshire.

The present dining-room has originally been somewhat larger, but, although many alterations have been made, the largest portion of the tempera-painted roof still remains almost intact.

It has a plan, as it now stands, of about 26 feet long by 21 feet wide. It is lined with wood and is divided into eight compartments by roughly hewn beams, each of which is entirely covered on all three sides with different kinds of painted panelling and imbricated ornamentation. The surface of each division is profusely decorated in different free or geometrical designs painted on light and dark grounds, enclosed by a bold guilloche border in reds and greens, with the outlines in black.

NUNRAW HOUSE, Haddingtonshire.

The apartment now used as a billiard-room contains a very interesting painted ceiling (fig. 10). It has a ground plan of 20 feet 3 inches long by 17 feet 6 inches wide.

It is divided into ten long compartments by cross-joists: each of these is subdivided into several oblong panels bearing decorated centres in black or white on yellow and red grounds alternately, enclosed by coloured bands and lines, counterchanged, interlacing each other in different ways at five or six points on each beam, similar to those at Collumie Castle.

The surfaces of the principal compartments are very elaborately decorated with almost every conceivable kind of ornamentation, embracing

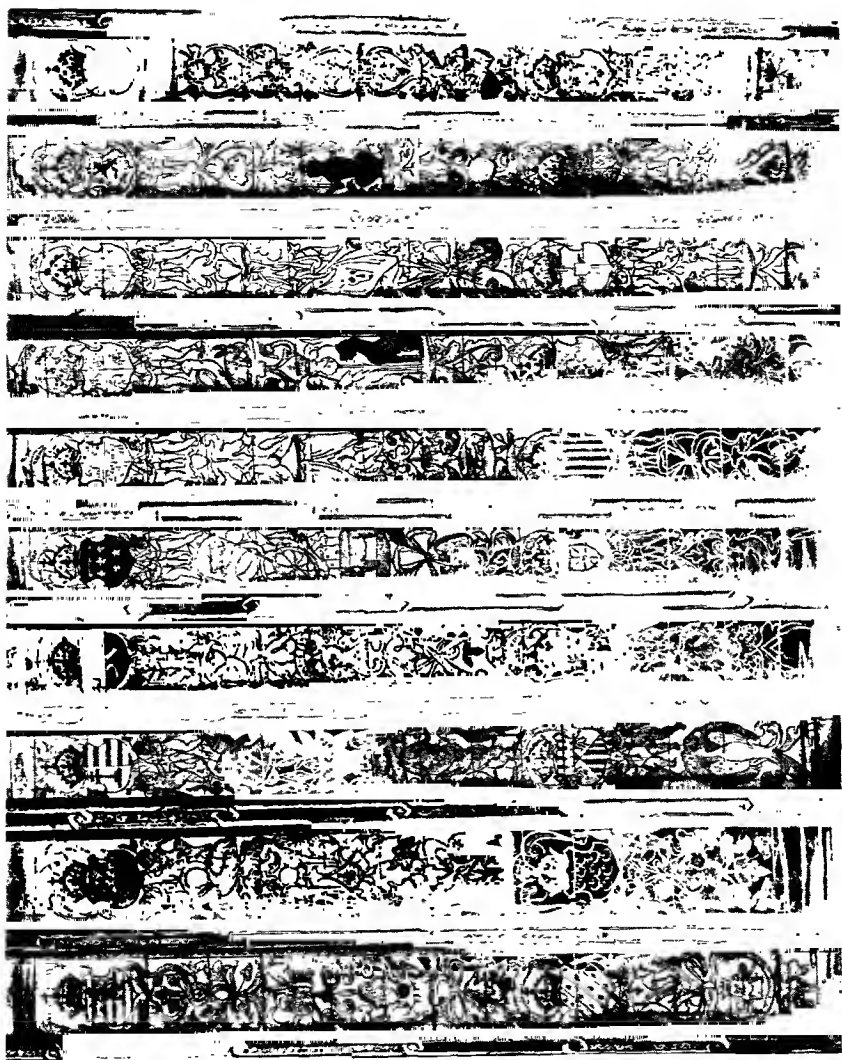


Fig. 10. Tempera-painted Ceiling at Nunraw House, Haddingtonshire.
(Drawn by A. W. Lyons.)

animals, musical instruments, trophies, and heraldry, flanked on either side by a guilloche border, similar to that at Balbegno, in red on a yellow ground.

Near the top and bottom of each division there is a shield, each charged with the arms of different kingdoms—twenty in all—supported underneath by two cupids and surmounted by an imperial crown, all of the same design, over which the respective titles are lettered in black on a white ribbon.

In the third division from the right and near the top a tilted cartouche shield bears a monogram¹ (P.R.C.H.), and in the fourth panel, almost directly opposite, a blue ribbon bears "GRATVS EST" lettered in black.

In the middle of the fourth panel, from the left, the lion and the unicorn may be seen supporting the crowned thistle, while the second division contains the Scottish crest.

PINKIE HOUSE, MUSSELBURGH, 1613.

The ceiling in the gallery is vaulted, similar to that in Earls Hall, lined with wood having its entire surface profusely enriched with decorative painting. It has an extended plan of nearly 80 feet long by 21 feet broad (fig. 11).

The middle portion of the ceiling is entirely occupied by a large square division 16 feet by 16 feet 3 inches, containing a perspective view of an octagonal-shaped cupola, ascending in three tiers of balconies, the first row being enlivened with cupids playing various musical instruments, terminating at its apex with a pierced dome bearing in its centre the armorial bearings of Alexander Seton, Earl of Dunfermline, for whom apparently the painting has been executed about 1613.

The arms of Lord Yester, Earl Bothwell, Farquhar of Gilmulscroft, the Earl of Angus, the Earl of Cassilis, Lord Borthwick, and the Earl of Winton are also painted in different parts of the imitation marbled cupola.

¹ The monogram may be read R.C.H. or P.C.H.

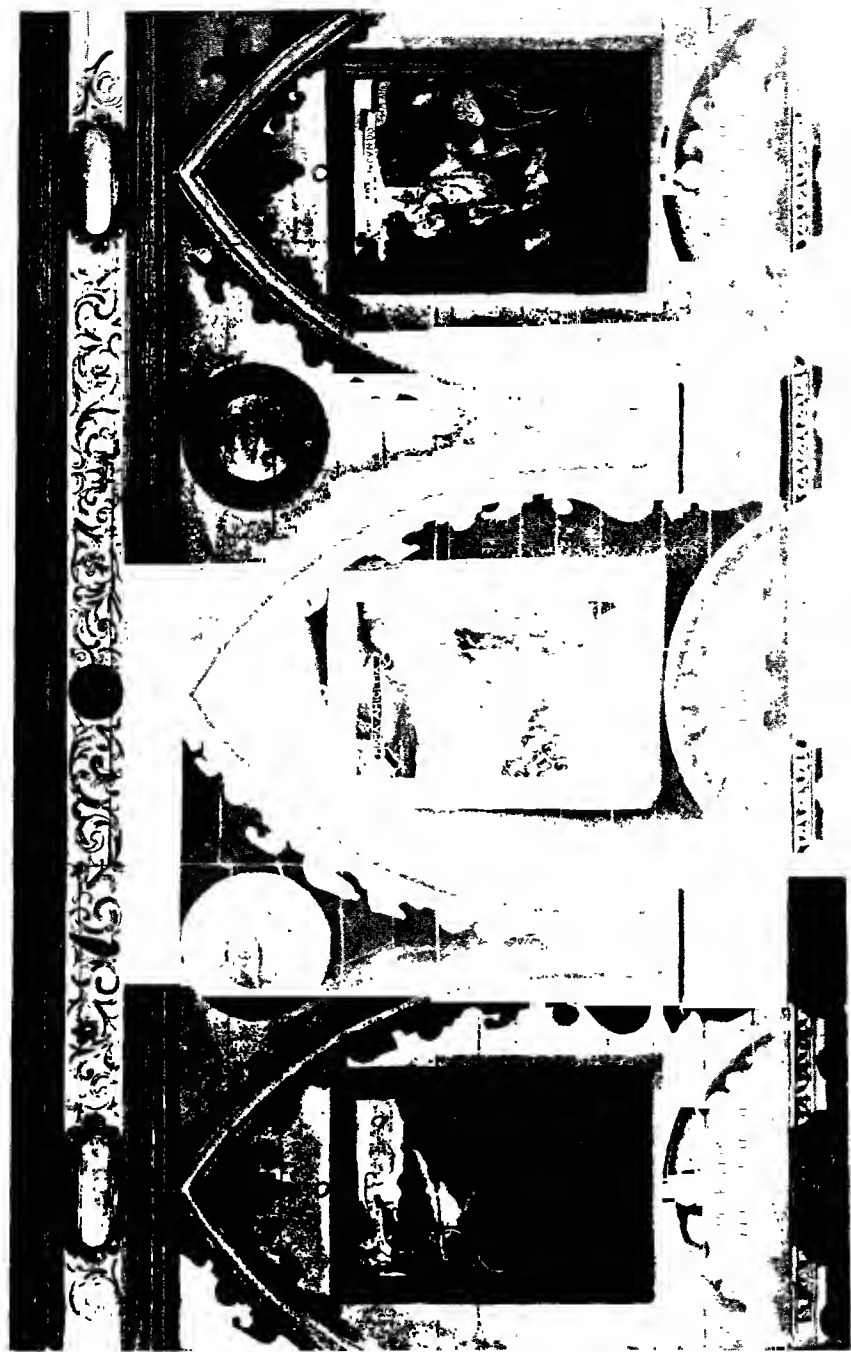


Fig. 11. Portion of Tempera-painted Ceiling at Pinkie House, Musselburgh, 1613. (Drawn by A. W. Lyons.)

Underneath the cupola there are four oblong cartouche panels containing different quotations lettered in gold on a black ground, and also four oval-shaped panels bearing pictorial or figure subjects.

This large compartment is enclosed by a very rich scroll and imitation moulding border which strikes off at its side-centres and runs straight across the middle of the ceiling, terminating at either end of the roof in a small circular division within which a perspective view of an octagonal Elizabethan cupola is painted.

On both halves of the ceiling, and also on either side of the middle ornamental border, there are three large Gothic arches enriched by cartouche-work, with a small white guilloche border painted in the centre on a blue ground bounded by gold lines. The spandril divisions formed thereby are pierced with a kind of port-hole decoration framed by a bold and strongly-coloured imitation circular moulding, or cartouche, in red and yellow. Twelve of these Gothic arches contain pictorial figure subjects, each enclosed by a black and gold plain frame, $4\frac{1}{2}$ inches wide, suspended by a painted ring from imitation nails. Four other similar but smaller arches, underneath the two end cupolas, contain an inner circle-top cartouche panel bearing quotations lettered in gold on a black ground. Underneath the twelve pictorial subjects within each Gothic arch, a lunette division is formed by a yellow band containing a segmental cartouche panel bearing gold-lettered quotations, in Latin, on a black ground. Both of these differently shaped arches spring from boldly drawn and painted ornamental corbels.

The whole scheme of decoration is completed by showing the entire design resting over an imitation painted cornice, extending the full length of the gallery on both sides, with an egg enrichment broken at intervals by projections bearing on their face a shell-rosette ornamentation.

The soffit of the oriel-window is also enriched with a large cartouche panel containing a painting of a sleeping stork holding a ball in its claws, with Greek quotations lettered above and underneath in gold, on ribbons enclosed by a quaint chain-border painted in yellow on a blue ground, bearing monograms of the Seton family, surmounted by an earl's coronet.

These complete a series of very carefully made water-colour drawings of the best remaining examples of that quaint style of tempera decorative painting so much in vogue throughout Scotland during the early part of the seventeenth century.

II.

NOTES ON CERTAIN STRUCTURES OF ARCHAIC TYPE IN THE ISLAND OF LEWIS—BEEHIVE HOUSES, DUNS, AND STONE CIRCLES. BY W. M. MACKENZIE, M.A., F.S.A. Scot.

Beehive Houses.—Eastwards from the northern shore of Loch Resort on the west coast of Lewis, and between the high lands of Uig and the Forest of Harris, runs a long irregular valley streaked with lochans and watercourses, and occupied towards its eastern extremity by the upper end of the fresh-water Loch Langabhat. On the south side the hills rise in a steep escarpment, while to the north the valley retires in a gentle slope passing into low uplands traversed by shallow glens.

It was from this valley that Captain Thomas in 1858¹ made known to the antiquarian world the existence of certain structures of a primitive type, popularly known, from their resemblance in form to the old straw hives, as "Beehive Houses," in Gaelic styled *bothain* (sing. *both* or *bothan*), a word cognate with the English "booth" and "bothie." He found his examples in the western end. Those with which I am about to deal lie farther east where the valley opens out into a scene of pastoral richness, quiet, and beauty, over which the shy deer boldly move among what were once the habitations of men.

It is clearly in large measure due to this remoteness that so many of these structures have been preserved. Yet even here evidence of destruction is plentiful. On the western spurs of the Cuaillean Hills, part of the uplands above mentioned, and within a mile or so of the high road to Uig, are the traces of several *bothain*. Tom-na-Bharabhas, for example, is a knoll deriving its name, according to tradition, from a

¹ *Proc. Soc. Ant. Scot.*, vol. iii. p. 127.

successful pursuit of the Macaulays of Uig by the Morrisons of Barvas, who overtook the plunderers of their cattle resting at this spot, probably in the two *bothams* whose ruins crown its summit. Of the larger sufficient remains to show clearly the characteristic construction and the circular shape, with a diameter of 7 feet between the narrow entrances which look N. and E.S.E. Its companion measures about a foot less. Farther east other ruins occur, and one of these was in summer occupation less than half a century ago, until supplanted by a larger modern dwelling to the construction of which the older buildings paid tribute.

A somewhat similar fate has overtaken the group on the eastern extremity of Bein-a-Chuillein, which were utilised as shielings by the crofters of Bernera up to little more than thirty years ago. Their final ruin was brought about, I am informed, by their being used for harbourage by poachers after the grazings had been incorporated in the deer-forest. There are the foundations of several on the hillside above Glen Marstaig, and one, in a rather better state of preservation, shows traces of adaptation to the more modern type in that its top has been adjusted to permit of rafters and a roof of heather or turf (fig. 1). The weakness of all these structures appears to lie in the upper portion where the curve becomes pronounced towards the apex. With care and attention to the outer covering of turf, which, though a superimposed weight, yet seems to add to the stability of the building, they may last indefinitely; once that is removed, di-integration and collapse is only a matter of time.

This is clearly seen in the relative condition of the members of another group across the valley. One is in a nearly perfect state. To this the peculiarity of its site must have largely contributed. It stands in a shallow gully whose sides converge towards the west, and which forms part of a shallow depression on the lower slope of Caltraseal Mhor, overlooking Loch a Sguir. Covered with compact turf from base to summit, it looks almost a part of its surroundings, save that its conical shape is too regular, and that here and there the destructive work of rabbits has laid bare the grey stones of its framework (fig. 2). A door, low and narrow, but sufficient for the admission of a full-grown



Fig. 1. Both at Glen Marstaig, with roof adapted to admit of rafters and thatch.

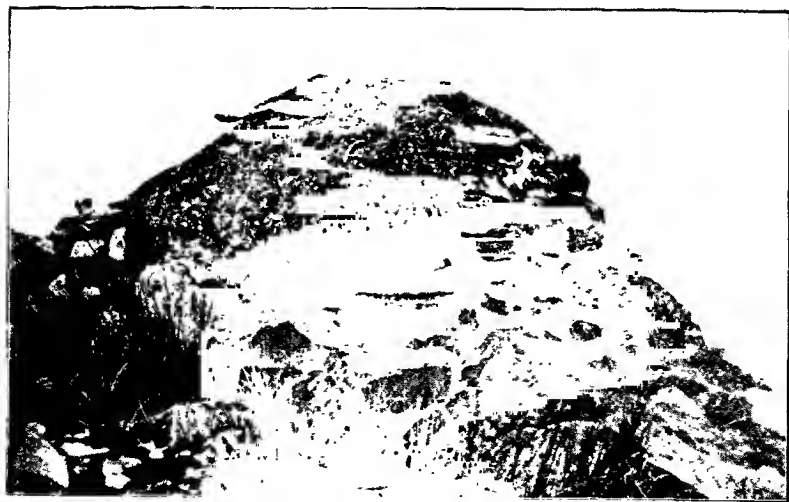


Fig. 2. Both at Loch a' Sguir.

man on his knees, faces south-east, and was apparently sheltered by a detached wall of its own height. Apart from this the only light to the interior is afforded by an opening in the centre of the roof of about 9 inches by 6, which might be easily stopped by a stone or more probably a turf. Opposite the door three small chambers or ambries rise in the thickness of the lower wall, one above another, each separated from that below by a single flat stone. This particular arrangement was not found in any other example. Two additional ambries open on either side on the level of the earthen floor, and a third directly opposite to the left of the doorway looking out. Between the last and the doorway a light brown ash gave evidence of the *cagailt* or hearth of the peat-fire. The diameter of the floor is 8 feet 4 inches between opposite ambries, and 7 feet 7 inches from the entrance to the opposite wall. The greatest height to the inside face of the top stones is 8 feet $5\frac{1}{2}$ inches.

On the more open ground near by are three other examples all more exposed in situation and so in various stages of imperfection. Of one about 80 yards to the south-west quite a quarter has collapsed. The greatest height of wall is on the north-east side, and measures 5 feet 4 inches perpendicularly from the ground. It presents a good section, showing the character of the building (fig. 3). The principal stones are long and flat, and each course projects over that below, until the round converges sufficiently at the top to be closed in the manner indicated above. The weight of the heavier stones alone binds the structure, which in this respect is Cyclopean in character. Gaps and interstices are filled in with smaller rubble. The material is supplied from the schistose gneiss of the district, which in many places weathers, or is easily quarried, in suitable slabs. In the present case the outer covering of turf has, of course, disappeared, save in patches round the base. It has six ambries on the floor level, and one higher up. The floor diameter is 7 feet 6 inches N. and S., and 7 feet 1 inch E. and W.

On a knoll about 50 yards N.W. of the last is a specimen also bereft of its covering, but otherwise, with the exception of the final course, complete (fig. 4). The basement wall, from whose inner edge springs

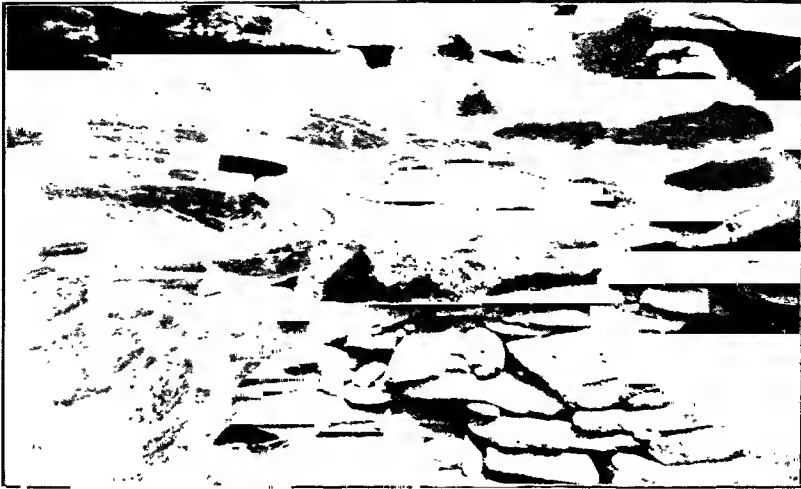


Fig. 3. Interior of Both at Loch a' Sguir, to show style of building.



Fig. 4. Both at Loch a' Sguir, uncovered.

the domed roof, and upon which it rests, is 3 feet in thickness and about the same in height. It is in this more massive part of the structure that the ambries or cupboards already mentioned are usually constructed. In this example four are so placed, but three others, 3 feet from the floor, now open to the outside. The floor space is rather larger than is common. It measures 7 feet 9 inches E. and W., and 8 feet 9 inches N. and S. The greatest internal height of what remains is 6 feet 8 inches, and the height when complete must have been little short of 9 feet. The doorway faces S.E. The structure as it stands lays bare for us, as it were, the typical skeleton of the *both*.

One other to the south of these completes the group at Garry-na-Sguir. It is the most ruinous, only about 4 feet 6 inches of wall remaining. Its greatest diameter is about 8 feet, and besides ambries it had apparently two entrances, facing N.E. and S.W. respectively. Two entrances, indeed, are not uncommon, and they are in all cases opposite to each other.

About half a mile farther south we reach the ample margin of Loch Choirigeol. Where the gently sloping meadow terminates abruptly at the foot of a rocky ridge to the west stands a compact group well suiting in their appearance the comparison to a Kaffir kraal, and strangely impressive in their suggestion of former residence and present abandonment. There are seven in all, of which two are in a state of fairly good preservation. The entrances generally look towards the south-east. Their proportions and main features, though varying, are on the whole similar to those detailed above. Three still wear a partial covering of turf: one is marred only by a hole in the back wall (fig. 5).

It will be observed that all the examples described stand well apart from each other, though associated in groups, and are built on the same simple plan, varying slightly only in dimensions and in the number of ambries and doorways. The interconnected and more complex groups described by Captain Thomas lie farther west and nearer the seashore.¹ It is not unlikely that this fact differentiates the more permanent from the temporary habitations of the original builders.

¹ *Proc. Soc. Ant. Scot.*, vol. iii, p. 127; vol. vii, p. 153.

I pass now to more isolated outlying examples. One at Garry-na-hine close to the Uig road, formerly a shieling, was occupied at Captain Thomas's visit (1866) as a residence, but is now abandoned (fig. 6). It presents some special features. There is a chimney, as Captain Thomas¹ noted, but it is clearly, in my opinion, a modern modification. In the main, however, it is a structure exactly resembling those already described, but more carefully preserved. Its longest floor diameter is 7 feet



Fig. 5. Both at Loch Choirigerod.

9 inches, and that at right angles 6 feet 4 inches. There are two doorways facing roughly E. and W. (fig. 7), and three ambries on the level, all these being integral parts of the original structure. The doorways are 3 feet 3 inches high and 1 foot 9 inches wide. The ambries are about 3 feet deep and 18 inches wide. Mr Carmichael, in a paper on the Agrestic Customs of the Outer Hebrides, forming an appendix to the Report of the Crofter Commission, describes the "*both cloiche*" stone bothy or beehive, "still," he says, "the shealings of the Lewis people"

¹ *Proc. Soc. Ant. Scot.*, vol. iii. p. 135.

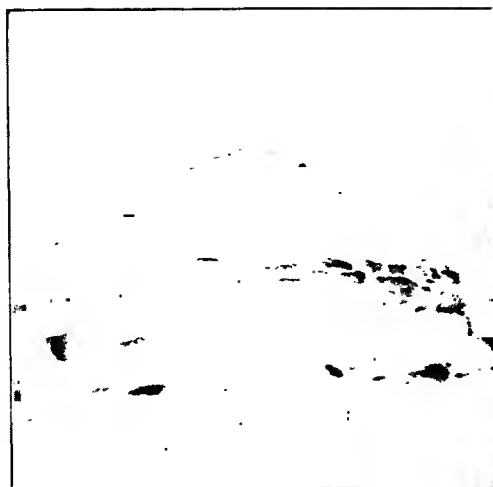


Fig. 6. Both at Garry-na-hine, from west.



Fig. 7. Both at Garry-na-hine, from east.

He refers to their internal arrangements as follows: "In the walls of the hut, two, three, or four feet from the floor, are recesses—Gaelic, *buthailt*, Scots, *bole*—for the various utensils in use by the people, while in the bosom of the thick wall low down near the ground are the dormitories wherein the people sleep. The entrance to these dormitories, slightly raised above the floor, is a small hole, barely capable of admitting a person to creep through." I have found nothing in those examined to



Fig. 8. Interior of Both at Garry-na-hine, showing ambries or boles, and bed.

answer to the latter description: indeed, in the Garry-na-hine example the straw and heather bed, banked up by a line of stones, lies against the wall opposite the fireplace (fig. 8).

The slabs of the present building are unusually long. About 4 feet up six complete the circle, and one of these is 4 feet 3 inches in length. The course above these projects considerably: one stone is 2 feet 8 inches wide. The roof, contrary to custom, is closed on the top by three stone slabs; the longest, in the centre, have a span of 2 feet 8 inches and a width of 11 inches.

This is the *both* described in a more summary manner by Captain Thomas as *Both, Cnoc Dubh, Ceann Thulabhig*,¹ and judged from its peculiar features and from personal information to be of comparatively recent construction. The representation of the chimney, however, in the section figured by Captain Thomas is rather misleading. He shows a carefully constructed vent opening on the roof of the building, whereas it appeared to me a roughly formed aperture in the solid base completed



Fig. 9 Both on Eilean Fear Chroithur.

in an unskilful, patched fashion from the outside (indicated by a slight projection on the one side in figs. 6, 7). The matter of the date of building I shall refer to presently. The foundations of a companion structure are clearly traceable a few feet farther east.

My last example occupies a lonely position on the east side of a small island outside the Little Bernera at the mouth of Loch Roag. It was complete, minus the turf covering, a few years ago, but has since collapsed (fig. 9). It has a floor diameter of 6 feet, converging to 4 feet

¹ *Proc. Soc. Ant. Scot.*, vol. vii, p. 161.

8 inches at the top of the standing portion, which is about 4 feet high. The entrance faces east. The *both* is, on the whole, a good deal smaller than is ordinary. The island is locally known as *Eilean Fear Chroithir*, "the island of the men of Croir"—a farm at the northern extremity of the Great Bernera formerly occupied by crofters. They came here, I was informed, to collect shell-fish, and no doubt also to utilise the patch of pasture.

When we seek local information as to the construction of these *bothain* we meet with nothing but professions of absolute ignorance. "Wherever placed," writes Captain Thomas, "all the natives agree that no one knows who built them, and that they were not made by the fathers nor grandfathers of persons now living." This general statement, however, he qualifies by reporting an assertion "that one was built by a person who is still alive" (1858), and, later, gives as his conclusion "from various circumstances" that the *both* at Cnoc Dubh "was made about ninety years back" (1867).¹ Struck with these two unique exceptions, I made careful inquiry of an informant in every way excellently qualified to speak on the subject, with the result that he refuses to admit the exceptions, and reiterates the entire local ignorance of the origin of these buildings. "My grandfather," he writes, "whom I well remember, lived here and among the 'beehives' 105 years: my father lived 87 years, and I am 50 years—perhaps the longest pedigree that can be found in Lewis or Harris." The whole district which I traversed in his company is thoroughly familiar to him, and he himself lived in his youth in the "beehives" of Glen Marstaig. "I have to say," he continues, "that the 'beehives' were as ancient and mysterious to my grandfather as they were to my father and me. There is not the slightest recollection of even the tradition of who built them, any more than of those who built the old Duns or the Druidical Stones." On the particular point at issue he is emphatic in declaring that he cannot accept the statement recorded by Captain Thomas—which, I may note, has passed into general

¹ Built by a man Smith from Callernish, says a local informant, practically corroborating Captain Thomas's statement.

and unqualified acceptance;¹ adding that all it may mean is that the man may have helped "to renovate and bring an ancient 'beehive' to a modern summer shieling, as many now living here have seen done. Captain Thomas's story must have originated from such tampering." The Glen Marstaig 'beehives' with which he was personally familiar were, he informs me, "reduced to summer shielings in 1832, and remained in use for that purpose until 1872, when the people were deprived of the grazing in order that the ground might be converted into a deer-forest." From a recent Bluebook we find further that the Scaliscro deer-forest, to which, in part, this addition was then made, was formed in 1850, it having been previously, under the Seaforth ownership, a sheep-farm. The groups above Loch-an-Sguir and Loch Choitigerod are included in the Morsgail deer-forest, constituted out of a sheep-farm also about the same time. But these *bothain*, my informant tells me, "were never occupied within the memory of living man."

The records of early travellers in the Highlands afford us scarcely any light on our subject. Wherever we meet with any description of a typical Highland dwelling, we invariably have it in a form still familiar to us (fig. 10). The modern shieling or *aruidh*, when it is not a mere turf hovel, is simply such a dwelling in miniature (fig. 11). We hear of the men at the opening of the shieling season early in June setting out with wood, heather ropes, etc., for the repair of the temporary dwellings. This is a contingency that could scarcely arise in the use of stone roofed *bothain*. For the crofter, indeed, the roof is the most valuable part of his house. When he is shifted from one site to another he carries his roof with him,² a natural economy in a country where growing timber is unknown. One witness from Harris stated to the Crofter Commission that when the people of his district in his youth went to the shielings, the huts they had on the hills were "like ordinary houses built of stone and turf."³

A reference to beehive structures is almost certainly intended in the

¹ Cf. *Prehistoric Scotland*, Munro, p. 338.

² Evidence Crofter Commission (1884), vol. ii. pp. 903, 905, 930, 943.

³ *Ibid.*, p. 853.



Fig. 10. Modern crofter's house at Coulgrein, Stornoway.



Fig. 11. Airidh or modern shieling.

words of Martin (*c.* 1695) speaking of Skye, where none, however, is said now to exist. After describing some "earth houses," he writes: "There are several little stone houses built above ground capable only of one person, and round in form. . . . They are called *Tey-nin-drui-nich*, i.e., Druids' House."

A similar attribution, significant, like the Greek "Cyclopean," only of helpless ignorance, occurs in Pennant, who, in his description of the Broch at Glenbeg, Inverness-shire, writes: "Almost contiguous to this entrance, or portico, was a small circle formed of rude stones, which was called the foundation of the Druids' houses. . . . I was told there were many others of the kind scattered over the valley." The "grotesque groupe" of shielings which he describes in Jura were constructed of "branches of trees covered with sods."¹

Pennant indeed gives a description with illustrative drawings of what he calls a Pictish building in Caithness, as supplied to him by Mr Pope of Reay. The appearance is that of a "beehive," the dimensions—a wall 14 feet thick enclosing an area of 22 feet, and measuring to the spring of the arch 12 feet—with the ground plan, showing eight lodging rooms of an oval form in the heart of the wall, suggest rather a Broch.

I need not enter into any discussion of the *type* of these *bothain*, as that has been thoroughly dealt with elsewhere.² This primitive approximation to the "arched roof" extends from Greece to Greenland; abundant examples are found in Ireland, where its pre-Christian character has been fairly established. O'Flaherty, writing of those in Connaught in 1684, speaks of them in terms identical with those derived from other sources: "nobody knows how long ago any of them was made."

We may note also the examples from Holyhead Island in Wales,³ and that at Chysauster, Gulval, Cornwall,⁴ which have been placed in the same category. All these are circular and dry-stone built, but have

¹ *Ciel Houses*. See Boswell's *Tour to the Hebrides*, 39th August.

² See *Proc. Soc. Ant.*, vols. III., vii.; Sir A. Mitchell's *Past in the Present*; Munro's *Prehistoric Scotland*.

³ *Archæological Journal*, vol. XXIV.

⁴ *Ibid.*, vol. XXVI.

about five times the amount of floor space of those in the Hebrides, with the walls, to which they are all practically reduced, three to four times as thick. As no roof has survived, the question whether in any case it was formed in the familiar "beehive" fashion of *encorbellation* is admittedly doubtful; while the extent of floor space to be spanned, varying from 15 to 34 feet, increases the improbability, especially when we note the polygonal character of the stones used.

No doubt, however, attaches to the method of construction of similar dwellings in the islands of the Mediterranean basin, where, says Mr Arthur Evans, there exists "a continuous zone of the Cyclopean tradition of domed chambers." From the mainland, too, we have precise testimony. M. Prosper Castanier, in his *Histoire de Provence dans l'Antiquité*,¹ writes:—

"On trouve, encore, en maintes régions du Bas-Languedoc et de Provence, des cabanes rustiques, placées généralement aux angles des champs, et qui ont gardé la forme antique: elles s'élèvent sur un plan circulaire jusqu'à une hauteur de deux mètres; à ce point naît la calotte de four qui les recouvre et que forment des moellons bruts, plats, posés en encorbellement et par assises horizontales. Le plus souvent une large pierre plate sert de clef à la voûte. Ces constructions n'ont ni ciment, ni pontre, ni tuiles, ni chevrons; elles composent souvent une pièce unique et possèdent une seule ouverture, étroite et basse. Elles servent aujourd'hui d'abris aux cultivateurs par le mauvais temps; parfois ceux-ci s'y cachent pour attendre le gibier."

He states, further, that the same methods of construction are to be found in the fortified positions at La Malle, La Tourre, L'Andido and other places, and concludes that all these go back to one time, and are the work of one people. They are alternatively called "Celtic" or "Ligurian." And, just as in the Hebrides, we find the traditional workmanship persisting among the Italian and French shepherds of the Alpes Maritimes, who still build circular stone huts after the beehive fashion, about 8 feet high and as many wide, contracting towards the roof, which is also of stone. Through the kindness of the Rev. J. E. Somerville, Mentone, to whom I am indebted for most of what I have said in this

¹ Vol. i., pp. 178, 179.

connection, I am able to give an illustration of such a hut, one of several said to be ancient, which has been repaired and roofed by the shepherds, who further provided it with the side openings from which they might shoot foxes who came to prey on the lambs (fig. 11A).

Returning now to the *bothain* of the Lews, we may conclude that in all the cases which I have described we are dealing with the early shielings of a people semi-pastoral in their mode of life. They are all

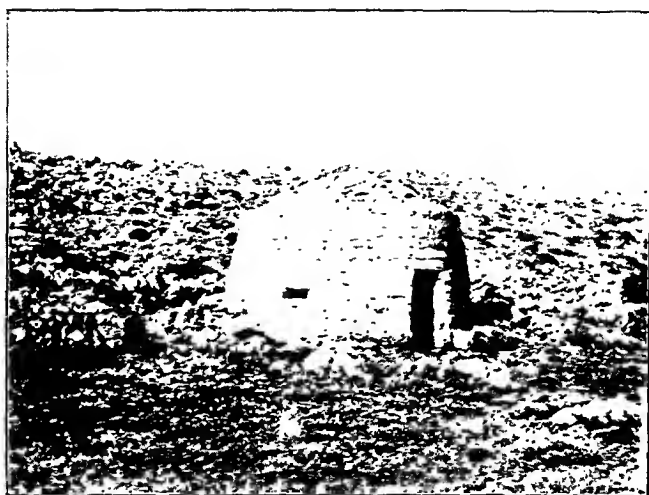


Fig. 11A. Shepherd's Hut in the Maritime Alps.

on garrys, or grassy knolls, which in their freedom from the damp moss afforded a resting-place for man and beast. The neighbouring lochs teem with fish. Probably they were occupied for a longer time than is the case now where the custom of pasturage survives. The people depended mainly on their cattle for subsistence, and their winter store of butter and cheese was made in the shielings. It is not necessary to suppose that every example, wherever found, is a shieling. The elaborate and interconnected structures of identical type,¹ described

¹ Probably "communal dwellings."

by Captain Thomas and others, probably indicate, as I have already suggested, the more permanent habitations in the neighbourhood of the tilled ground and near the fruitful sea. While the latter might in course of time be abandoned, the former, as still satisfactorily serving a need, would continue, as they have done, in use to the present day.

STONE CIRCLES.

In the matter of the stone circles of the Lews, that at Callernish, which is rather a circle of small diameter with a central cairn and con-

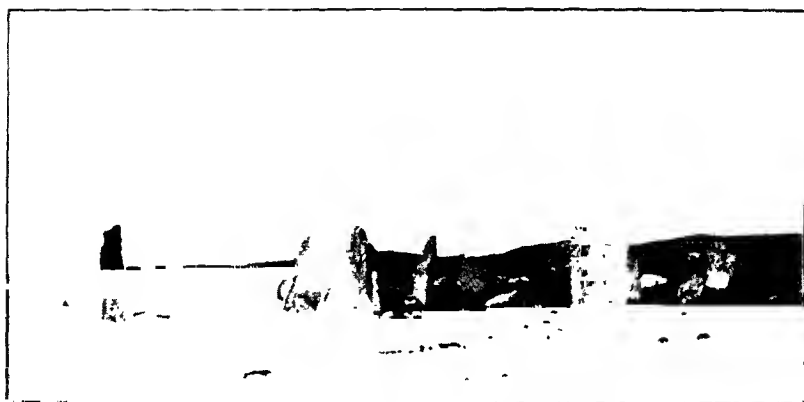


Fig. 12. Concentric Circles near Callernish.

verging lines and avenues of standing stones, has, by its magnitude and imposing appearance, cast all others into unmerited shade. Yet even the significance and picturesqueness of this majestic monument may be enhanced by consideration of the fact that two slighter but in themselves striking and interesting groups stand about a mile to the east, on a low ridge striking southwards from the highroad to the shore of upper Loch Roag; while about a couple of miles farther east, flanking the Uig road, are one shapely circle and some minor fragments, still erect, of another. Westwards, again, on the low cliff of the Great Bernera, stand three

conspicuous stones overlooking the Narrows of Earshadr. The mere enumeration of these facts seems to me suggestive.

Moreover, these minor circles are not all of the same type. That nearer the Callernish road is made up of two concentric rings (fig. 12). The outer consists of eight stones, and there are four lying. The greatest breadth of one triangular stone is 3 feet 10 inches. This outer ring has a rather scattered appearance. The inner ring (fig. 13) is marked by four stones, of which three on the east side stand close together: the



Fig. 13. Inner Ring of Concentric Circles near Callernish.

fourth is opposite, rather to the north. Two of the former group are 5 and 6 feet respectively above ground: the solitary stone is 8 feet. There is no central mound or cairn or other enclosed feature.

About a quarter of a mile due west, where the ridge, after sinking to the moor, rises slightly again, is the companion circle, a single ring of much taller stones (fig. 14). Five still stand, three are on the ground. Of the latter, what looks the most massive measures 6 feet 2 inches by 8 feet as uncovered, and is 7 inches thick at what would have been, when erect, the top. From this to a square stone opposite the diameter measures 60 feet. The largest erect stone, of triangular shape, is 10

feet 2 inches above ground. The most interesting feature, however, is a large stone-built cairn occupying about half the internal space (fig. 15), and having a small chamber or pit in its centre shaped like a large round-bodied bottle with a short neck, in this respect resembling the pit in the Callernish cairn, which is, however, rectangular. The highest surface of the cairn is about flush with the surrounding peat, which has been cleared away from both circles to a depth varying from



Fig. 14. Circle near Callernish, showing four of the five stones.

1 foot to 18 inches. In the central space of this circle round the cairn were found, when it was laid bare, four square holes containing charcoal.²

The circle beyond Garry-na-hine overlooking the Uig road is also conspicuously placed.¹ It is formed by five stones (fig. 16) all about a size, that at the southern extremity, where there is a gap in the regularity of their positions, being 8 feet 9 inches high by 3 feet 2 inches broad, and varying in thickness from 6 inches at bottom to about 8½ inches near the top. The diameter of the closely circular enclosed space is

¹ *Tursachan Ceann Thulabhag.*

² *Proc. Soc. Ant.*, vol. III.



Fig. 15. Circle near Callernish, showing central cairn.

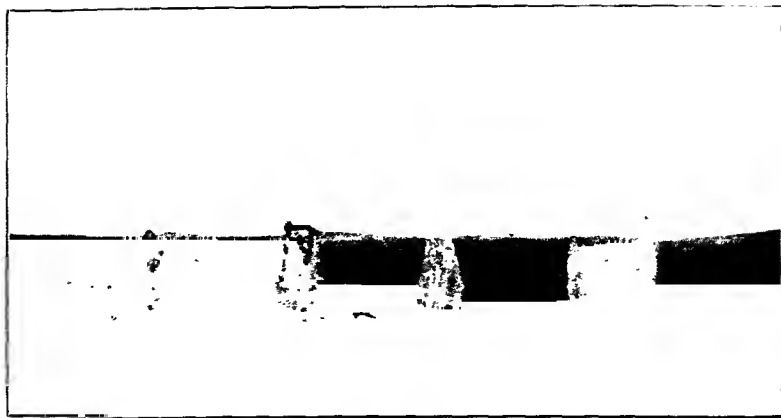


Fig. 16. Single Circle near Garry-na-hine.

about 30 feet 6 inches. In the centre is a rather dilapidated cairn about 6 feet across, with a stone on end 2 feet high (fig. 17). Quite two feet of turf have been removed from inside the ring of stones.

Less than a quarter of a mile into the moor on the other side of the road are three small stones standing about 3 feet above the moss, the remains of a circle of which all other portions have disappeared¹ (fig. 18).



Fig. 17. Cairn in centre of Circle beyond Garry-na-line.

All the stones making up these groups are formed of the schistose gneiss of the locality, but do not appear to have been quarried in the immediate neighbourhood.

DUNs.

The word '*Dun*,' as cognate with O.E. '*tun*,' modern '*town*,' is applicable to any form of fortified position, the original '*town*' also having had a similar significance. An exhaustive list of all such sites

¹ *Tursachan Airdh nam Bidearan.*

in Lewis has been compiled,¹ and to this I purpose making but one addition, with elucidatory notes on certain others.

As in the case of the circles, one example dominates the whole—the well-known Dun at Carloway, which is of the type of structure known as a broch. One side still rises to near the original height, and well shows the peculiar contour of the external wall (fig. 19). Its inner face displays the characteristic openings to the inter-mural galleries (fig. 20). The door side is, however, reduced to the level of the lintel (fig. 21).



Fig. 18. Portions of a Circle near Garry-na-hine.

The solid wall here is 10 feet thick. Inside the passage rises to the central court, though the slope is no doubt largely due to accumulated debris. The diameter across the court is about 24 feet. The section exposed on the right contains the ruin of the stair. The lowest gallery, with those above, extends all round the standing portion, and the walls are most carefully constructed of easily handled stones pretty much of a size. It is 5 feet 6 inches in height. Captain Thomas in his elaborate description² speaks of a set of beehive cells in the basement, lower still. The section on the left shows the twin walls (fig. 22). The outer is

¹ *Archæologia Scotica*, vol. v, p. 365.

² *Ibid.*

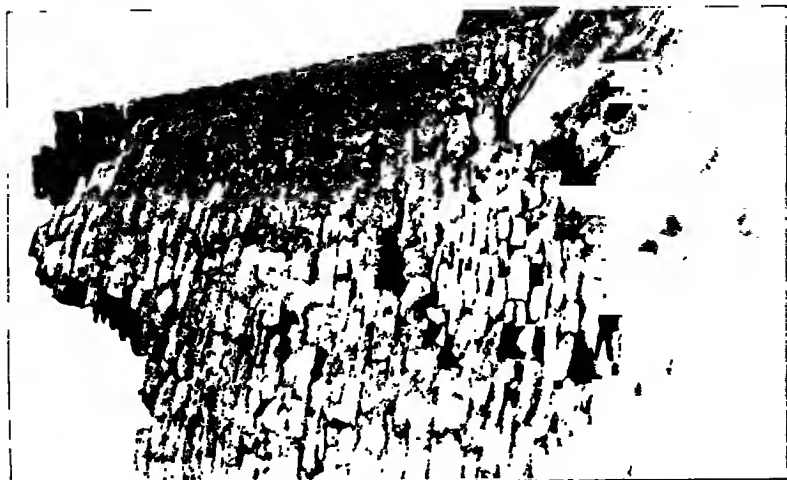


Fig. 19. Dun Carloway, east wall



Fig. 20. Dun Carloway, showing openings to galleries, from the west.



Fig. 21. Dun Carloway, entrance.



Fig. 22. Dun Carloway, section on left or north of east wall.

3 feet thick and the inner 2 feet 4 inches, while the interspace measures 2 feet—giving a total thickness of 7 feet 4 inches.

Dun Carloway belongs to the class of what may be called shore duns. A more striking example in site occupies the top of a small headland at the northern point of the Great Bernera, looking out on East Loch Roag and visible from Dun Carloway. It is known as Dun Stuidh, and has not so far, to my knowledge, been recorded. The site is



Fig. 23. Portion of building at Dun Stuidh, Great Bernera.

90 feet above sea level, and is approached from the land side over a narrow saddle-shaped isthmus, traversed by a deep chasm. The position thus resembles that of Dun Arnistean on the western shore of the main island, below Dell, which is even more difficult of access. A portion of wall on the inner face of what is practically an isolated stack is all that remains of the original defences of the latter. Of Dun Stuidh, however, the ruins are considerable though chaotic, and on the outside grass-grown. Concentric walls are clearly traceable, and to the right of the entrance which opens on the east side, looking

seawards, is a small chambered portion 2 feet 6 inches wide which has escaped being stopped up by the tumbled masonry. Opposite the land approach a patch of the outer building shows clear (fig. 23). The distance from the extreme outer to the extreme inner face of the concentric walls varies from 9 to 10 feet, and the apparent greatest diameter of the structure, including the walls, measures 39 feet, giving for the inner court a diameter of about 20 feet. The ground plan is roughly circular.

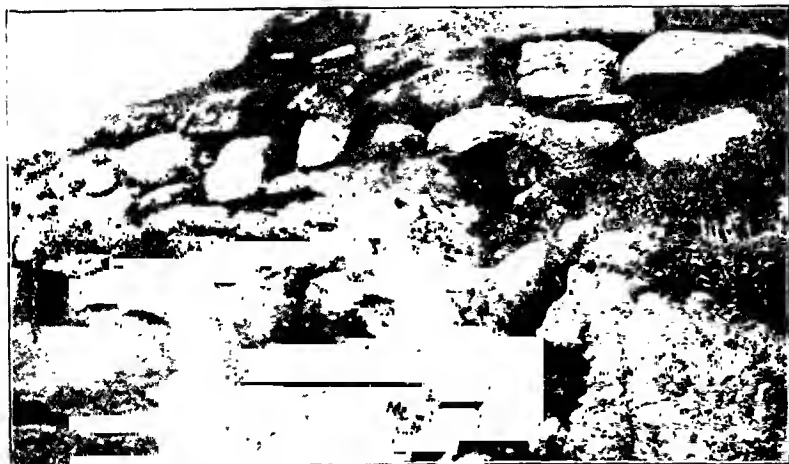


Fig. 24. Portion of building at Dun Nicisabhat, Kirkibost.

Reduced to little more than green ramparts one within the other, but showing at one place the masonry rising from the rocky site (fig. 24), is Dun Nicisabhat in Kirkibost, on the southern shore of the same island of Bernera. Captain Thomas gives an alternative name of Tidaborough. Its stones have been utilised in the construction of adjoining houses. It rises from the edge of a steep escarpment about a quarter of a mile from the shore. The entrance is on the north side. Its extreme diameter is between 50 and 60 feet over an irregular grass-grown enclosure, while the inner court measures about 30 feet inside the wall, which has an apparent thickness, at the base, to which it is reduced, of

nearly six feet. In its present condition, however, a superficial view of the material affords little that is definite.

My next example belongs to the class of lake duns such as Dun Barvas, Dun Shadir, and many others in the Lews. It stands on—covers, indeed—a little island on Loch Bharabhat at the southern end of the Great Bernera—about 80 feet from the shore, or, according to Captain Thomas,¹ 20 fathoms from the grass line. It is approached over a

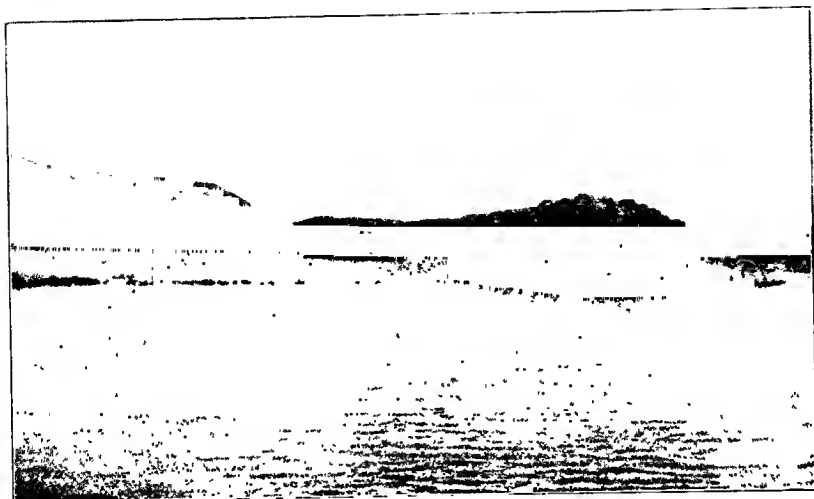


Fig. 25. Dun Bharabhat, Great Bernera.

causeway, now appearing above the water as *starran* or stepping-stones (fig. 25). In the "Traditions of the Macaulays"² Captain Thomas notes that he has never seen such stepping-stones "placed in a straight line, but always in a curve," which he considers "an obvious advantage in defence." In the present case the causeway is certainly curved, more probably following a slight ridge in the lake bottom; but the width and solidity of the approach through the comparatively shallow water so near shore appears to me to negative any notion of defensive stratagem.

¹ *Archæologia Scot.*, vol. v. p. 391.

² *Proc. Soc. Ant. Scot.*, vol. xiv. p. 363.

On reaching the island we find, resting on the native rock and with but a narrow margin between it and the water, a thickly lichened wall rising to a height of at most 10 feet 8 inches and extending for about a quarter of the way round. Thereafter it is a low tumbled wall of irregular shape, as it follows the contour of the island, enclosing a mass of loose stones overgrown with honeysuckle and brier. The ground plan is thus difficult to get clear; but such as it is, it may be found in the paper of which I have spoken above.¹ The diameter of the area within



Fig. 26. Dum Blarabhat, interior

the extreme walls varies from 25 to 36 feet. The central stones would seem also to indicate a structure of some sort, whose nature and purpose, however, cannot be discerned. Between it and the line of wall to the south is a crescent-shaped space, measuring at the most about 18 feet.

The erect portion of wall is on the north side, facing the stepping-stones, and shows two openings, the lower hidden by the vegetation. These have an average width of about 2 feet 4 inches, and together give an open space 6 feet high (fig. 26). From this westwards the wall is solid, but to the east runs a gallery flagged on the top—which forms

¹ *Archæologia Scot.*, vol. v. p. 391, and Plate 48.

the upper surface of the wall—in the usual broch fashion. It is choked with fallen material (fig. 27), but would seem, as Captain Thomas affirms¹—and he saw the ruin in rather better condition—to have been occupied

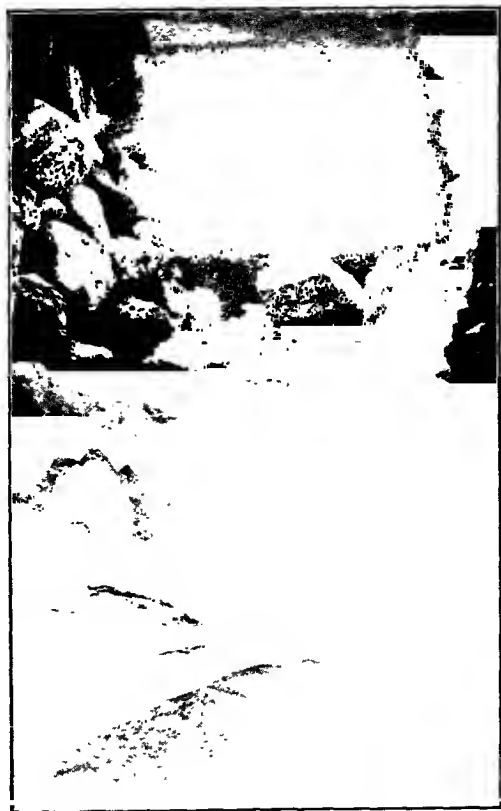


Fig. 27. Dun Bharabhat, interior of gallery.

by a stair. The solid wall on the other side would seem to have flanked the entrance (fig. 28). It is 8 feet thick about 6 feet from the base. In Dun Bharabhat we appear to be dealing with a broch which

¹ *Archæologia Scotica*, vol. v. p. 392.

either possessed certain peculiar features of its own, or was subjected to some later modifications of the original structure.

I have now to deal with two duns which plainly do not come under



Fig. 28. Dun Bharabhat, southern extremity of wall.

the category of brochs. On the main island, off the eastern corner of Bernera, is Dun Baraghloum. It occupies the crest of a small bluff 25 feet above sea level, with half a mile of narrow sea loch on its west side and a short bight on that opposite. A ditch or dry moat apparently

filled up with debris cuts across the level, and on either side are the foundations of a curvilinear building of stone connected across the hollow by a line of stone causeway. About a third of the length of each is cut off by a transverse wall, dividing it into a larger and a smaller compartment, the latter of which we may take to have been a sleeping chamber. Enclosing the whole is a broken line of circumvallation.

The structures are parallel to each other and point roughly east and west. The outer is rather pear-shaped, and while its western division

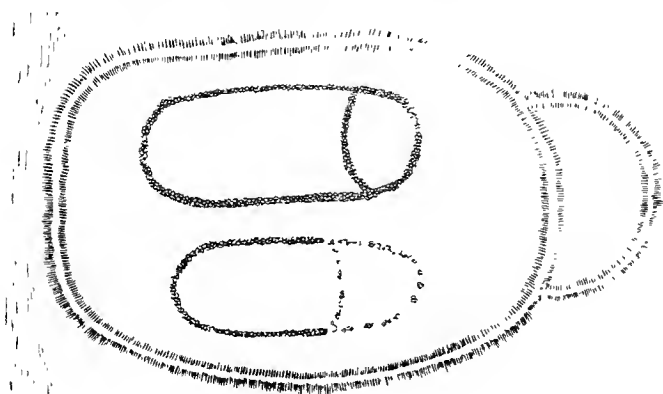


Fig. 29. Rough sketch-plan of Dun Mara. (Scale, 24 feet to an inch.)

measures 18 feet by 10 feet 5 inches, the other has mean measurements of 10 feet by 20 feet. The inner building is 20 feet long in the eastern compartment and 7 feet 2 inches in the other, while it has an average breadth of about 12 feet. The inner faces of the roughly built walls are mostly bare, but the outer are grass-grown. The thickness of the walls, reduced to their present condition, does not exceed a few feet. At the narrow bridge the ditch is 13 feet wide.

A similar arrangement of buildings within a grassy rampart is to be found on the summit of the headland known as Dun Mara (fig. 29) on the west coast of the island below Cross, Barvas, and a few miles from the

Butt. The circumvallation here is clearly defined at an average distance of about 6 feet from the remains of the stone buildings. To the right of the entrance to the works, up to which there is a gentle rise, are traces of a semicircular hornwork of earth. Of the interior structures, both of which are divided transversely in a precisely similar manner to those of the first case, one to the left is 24 feet for the one compartment and 8 feet for the other on the longer axis, east and west, with an average width of about 12 feet: while its companion is 19 feet by 10, with the smaller section in addition rather ill-defined and broken in outline.

In these twin structures surrounded by an earthen rampart we seem to have to do with a type of fortification hitherto undescribed so far as the Lewis is concerned. Captain Thomas reports¹ that "one of the old people" informed him that Dun Mara had been "as round as a bottle," and that eighty years before that time it was "quite entire," in which information the Captain comments he was "certainly mistaken." So far as the stone portions are concerned, I have observed their like in the ground plan, though generally there associated in groups connected by low passages, in the island of Berisay, which Neil Macleod fortified and held for three years (1610-1613) against the Mackenzies of Kintail, who had at last obtained possession of the island. It is known from the indictment at his trial that Neil ran "divers forays" on the main island, and these constructions in the neighbourhood of fertile districts may have served as bases for this purpose.² In any case, it is not likely that they can be dated any time posterior to the last great internecine struggle which convulsed the Lewis.

¹ *Archæologia Scotica*, vol. v. p. 372.

² There is no water supply in either case.

III.

THE FORTS OF KILMARTIN, KILMICHAEL GLASSARY, AND NORTH KNAPDALE, ARGYLE. BY DAVID CHRISTISON, M.D., SECRETARY.

The forts of Lorne and Loch Awe, with a few in the north of Craignish, and an outlying one in the far north at Onich, Ballachulish, were described by me in vol. xxiii. of our *Proceedings*, pp. 368-432. Thus were recorded all the known forts, fifty-nine in number, in the north of the mainland and the adjacent smaller islands of Argyle, as far as the south end of Loch Awe. To these I am now able to add twenty-four of the thirty-six known to exist southward in the adjacent parishes of Kilmartin, Craignish, Kilmichael Glassary, and North Knapdale. It was my ambition to overtake the whole number in the district, so as to complete the record thus far, but an illness during the last fortnight of my holiday obliged me to leave out the remaining forts of Craignish, and those on the east side of Loch Sween.

The names of the forts are taken from the O.M., as carefully verified by the Officers of the Survey, and the translations occasionally given are on the authority of that well-known Gaelic scholar, the late Rev. Dr Alexander Stewart of Ballachulish. The plans are on the scale of 60 feet to the inch, double that used for the forts of Lorne, which were kept on the same scale as that of the much larger Lowland forts previously described by me, but which proved inconveniently small for the Highland forts. My plans, taken from measurements by tape and pacing, can only claim a rude accuracy, but were helped in some cases by the Ordnance plans on the 25-inch scale, although that scale is not large enough to delineate satisfactorily the majority of the forts.

A.—FORTS IN THE PARISH OF KILMARTIN.

1. *Tur a Bhodaich*.—This fort lies one mile north of Kilmartin parish boundary, but it is convenient to include it here. It is nearly $4\frac{1}{2}$ miles due north of Kilmartin Church, half a mile north of Lochan

na Goirt, and 697 feet above the sea. I was unable to see it, but have got the following description of it from Mr Alex. Mackie, Corr. M.S.A. Scot.

The fort is situated on the top of a conical hill very steep on all sides. It is very ruinous on the east side, which resembles a cairn, but on the west side about 4 feet in height of wall is visible on the outer face. The inner face is not well preserved. The entrance is on the north, and is about 3 feet 6 inches wide, and shows no rebate. Its wall stands about 4 feet high to the outside, and is at least 6 feet thick. It may have been more, but the exact thickness cannot be determined without excavation, as a modern rude shelter of rough stones has been constructed in the doorway. The fort is nearly circular, and measures 54 feet in diameter over the walls.

2. *Dun an Nighen*.—Fully $2\frac{1}{2}$ miles N.N.E. of Kilmartin Church, at the head waters of Kilmartin Burn, 500 feet above the sea, a little beyond Tibbertich, the last inhabited place in the glen, which lies on high ground a quarter of a mile west of the burn. The fort, although only 150 yards east of the burn and road, is hidden by an intervening ridge that rises abruptly from the road, and it is only after climbing round the south end of this ridge that it comes into view, crowning a parallel ridge, with a very steep descent to a marshy flat about 60 feet below (fig. 1).

Scrambling up to the neck, seen on the sky line in the view, a wall comes in sight drawn across the rocky top, and barring access to the interior of the fort (fig. 2). It is still 5 or even 6 feet high near the middle, but at the ends streams down the slopes in utter ruin. It is only 3 or 4 feet high inside. The width is from 9 to 10 feet, and through it there is no visible entrance. A wall of like dimensions, except that the inner face hardly rises above the interior, defends the northern end (fig. 3). It is pierced in the middle by the only entrance, about 6 feet wide, which is much ruined, but a part at the S.W. corner survives (fig. 4), carefully built of stones much larger than those of the wall. The eastern side has been defended by a wall, the fragments of which

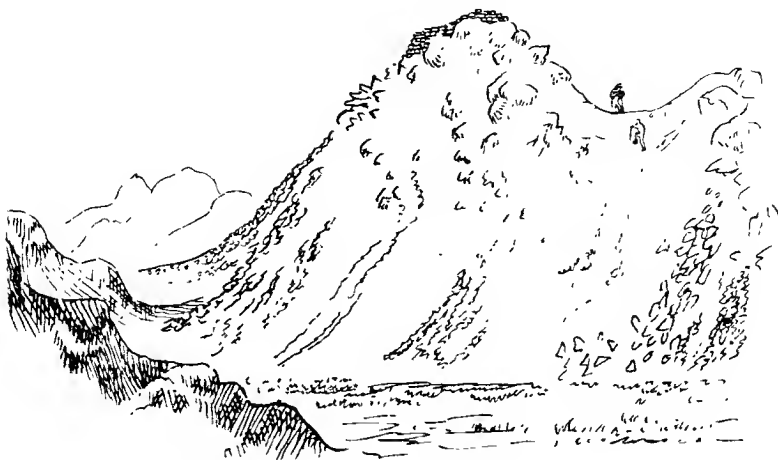


Fig. 1. Dun an Nighen, Kilmartin, from the south.



Fig. 2. Outer face of wall, south end of Dun an Nighen.

have slid down the slope along with the decaying rock. No artificial defence seems to have been thought necessary on the west side, where

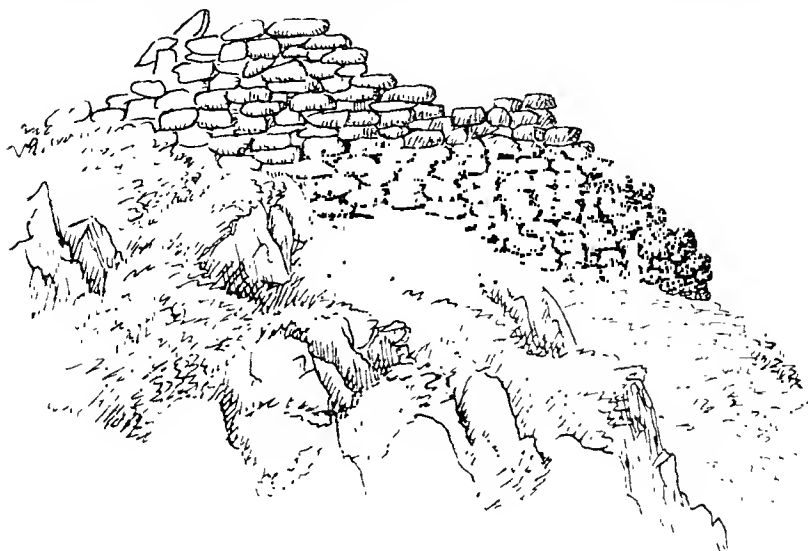


Fig. 3. Outer face of wall, north end of Dun an Nighen

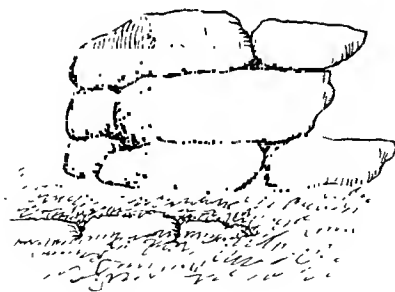


Fig. 4. Masonry at entrance, Dun an Nighen.

the steep slope is twice the height of the one on the east, and the rock at the top is less decayed. The level interior (plan, fig. 5) is oblong, with straight sides and rounded ends, and measures 45 by 30 feet.

This fort is the *Dun-na-hein* of Miss Maclagan, who unaccountably calls it circular, and speaks of a second wall, "a good way down the steep, where few would venture to go," on which "the decay of the rock has had still more disastrous effects." But it is most unlikely that a wall could have been built on such an exceedingly steep slope, and I think

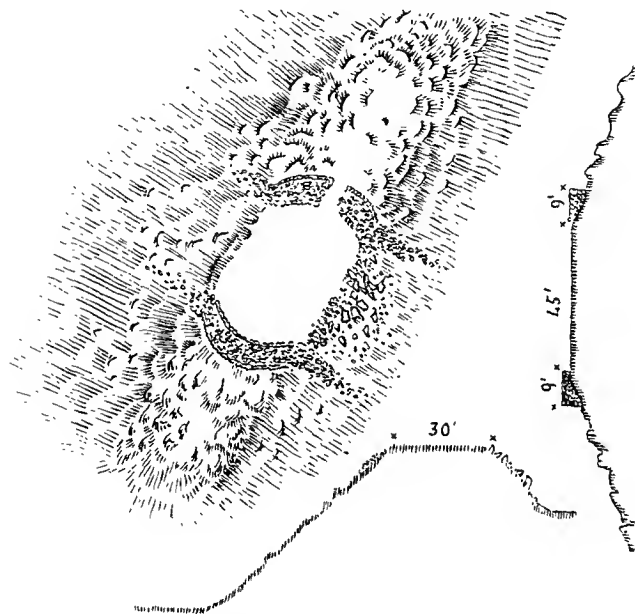


Fig 5. Plan of Dun an Nighen, Kilmartin.

Miss Maclagan must have been deceived by a chance arrangement of the fragments of the upper wall in sliding down the slope.

3. *Dun Mhic Choish*.—Half a mile down the valley from Dun an Nighen, a green, nearly level-topped ridge, on the east side of the road, leads in another half mile to Dun Mhic Choish, on the top of a rocky mound that strides across the ridge near its sudden termination at the edge of a precipitous wooded descent 300 feet in height.

The site is 450 feet above the sea, $1\frac{3}{4}$ miles N.N.E. of Kilmartin Church, and 250 yards S. of the pleasantly situated upland farm-house of Creagantairbh Mòr. The position is important, as it overhangs the

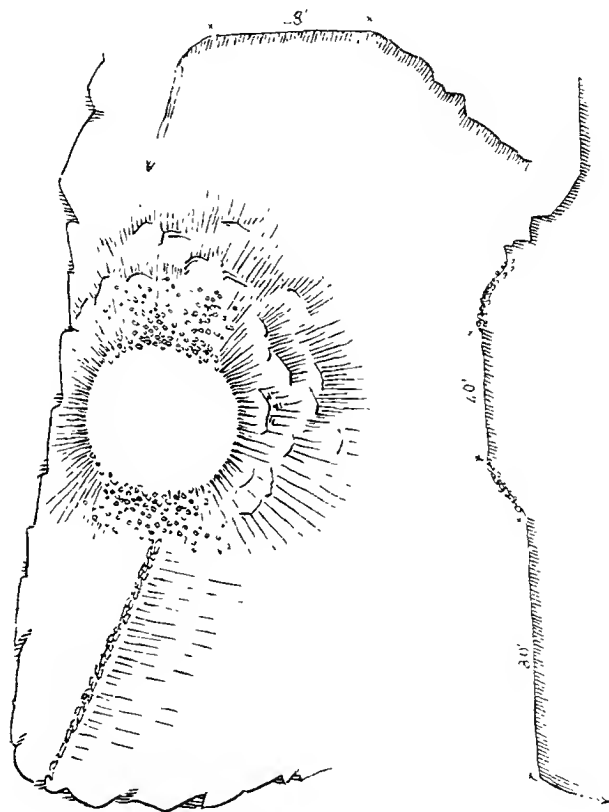


Fig. 6. Plan of Dun Mhu. Chiorsh.

bifurcation of the pass from Kilmartin to Oban in one direction and to Loch Awe in the other.

The level interior (plan, fig. 6) occupies the whole summit of the knoll, and measures 48 by 40 feet. To north and east the descent is

30 to 40 feet high, steep, and broken by little mural faces of rock. To the west the ground falls almost at once to the edge of the lofty precipitous bank. On the south, a descent about 10 feet high falls on a narrow platform, 80 feet long, from the point of which you look down an almost mural though wooded precipice to the pass 300 feet below.

Scanty debris peeping through the sod over a width of 24 feet on the north and 15 on the south slope is all that remains visible of the wall. The platform below has a wall on its east side, but it seems to be a modern fence. It is here, however, that the fort was most vulnerable, as the fall in the ground eastward is quite gentle and smooth, and the fort is only 10 feet above the platform. The late Rev. Alex. Stewart (Nether Lochaber) translated *Mhic Choish* as "son of Coas," a name which occurs on an ancient Irish tombstone at Glendalough as *Mac Cois* (*Christian Inscriptions in the Irish Language*, Petrie, edited by Miss Stokes, ii. No. 71).

4. *Creag A' Chapuill*.—No fort is marked here on the O.M., but I was directed to it by the tenant of Creagantairbh Beag, a farm by the roadside about a mile south of Ford, Loch Awe. Creag A' Chapuill (plan, fig. 7, from the O.M.) is a finely-formed rocky hill rising to a peak 920 feet above the sea, and, like others in the vicinity, precipitous to the south-west. A col, about 600 feet above the sea, connects it with Creagantairbh (625 feet), a counterpart of itself on a smaller scale, but more conspicuous, as it comes nearly down to the road, whereas Creag A' Chapuill lies back.

Following the march dyke at the col westward, on the lookout for the usual small oval fort, I was puzzled on finding to the left the remains of a straight wall, about 50 feet above the highest point attained by the dyke, just where the steep ascent eased off, at about the 800-foot contour: and on walking up the gentle slope towards the top of the hill for about 100 yards, I was still more surprised to see no sign of fortification to close in a space for defence. Returning to the wall, which ran for about 80 feet between two large inaccessible rocks, I soon found that it was continued at intervals in both directions, wherever the

rocks were insufficient as a defence. On both sides it ran out at the great south-western precipice, and thus a somewhat quadrilateral space at the top of the steep ascent, measuring perhaps 250 by 200 yards, was effectually fortified.

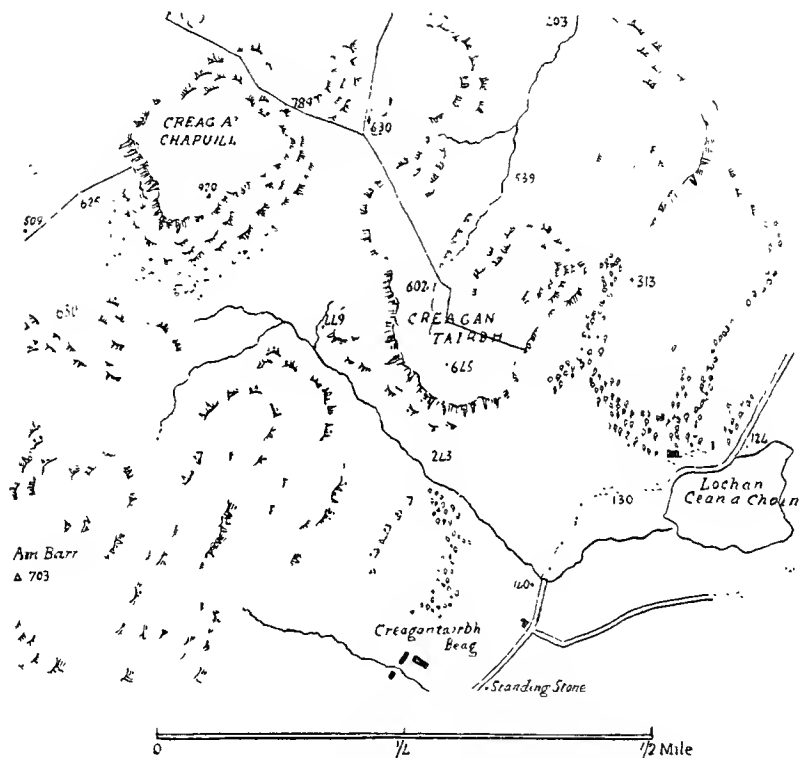


Fig. 7. Chart of Creag A' Chapuill, etc., near Ford. Reduced from 15-inch O.M.

This fortress, of quite exceptional size in the Highlands, is situated in a wild, remote region, $2\frac{3}{4}$ miles N.N.E. of Kilmartin Church, with a superb view up the whole length of Loch Awe to Ben Cruachan, and forms one of a group of four forts, the other three being *Don Chonallaich*,

Dun an Nighen, and *Dun Mhìr Chloish*, which are all in full view, and the furthest only three-quarters of a mile off.

5. *Near Slocaul*.—A mile and a quarter W.S.W. of Kilmartin Church, and a quarter of a mile west of the cheerfully situated hamlet of

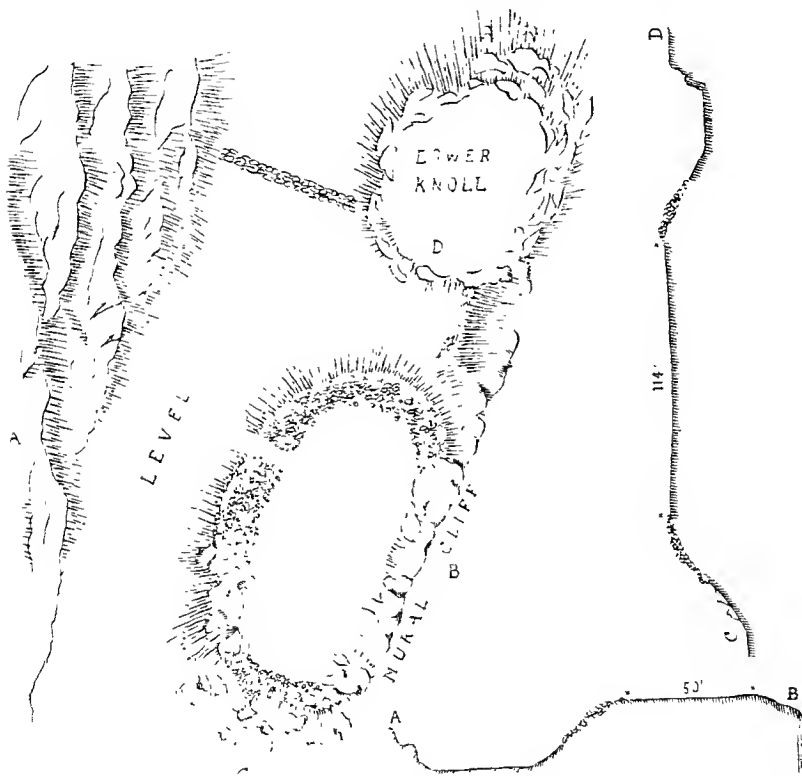


Fig. 8. Plan of Fort near Slocaul, Kilmartin.

Slocaul, this fort stands 300 feet above the sea, on a rocky knoll on the west side of the burn that flows past the hamlet.

The fort occupies the whole top of the knoll, and the interior is a grassy flat of 114 by 50 feet with straight sides and rounded ends (plan, fig. 8). The eastern side rests on the edge of a mural cliff about

30 feet high. The opposite side falls by an easy descent to a narrow flat 20 to 25 feet below, beyond which rises another and larger knoll. The south end slopes by a steep rocky descent to open ground 30 feet below; and on the north the descent is only 10 to 15 feet deep to a neck joining on to a third smaller and lower knoll. Intrusive rocks contribute to the defence of the sides, and the ends and western side have been protected by a wall, the debris of which forms a mound 2 or 3 feet high and 20 to 25 wide. A row of large stones lines the foot of the western debris. The entrance is on the west side. Walls connect the three knolls, but seem to be modern.

6. *Near Loch Michean*.—Up the little valley from the last, past the north end of Loch Michean, and a quarter of a mile down the glen to the north-west, a very small fort stands on an isolated knoll, which rises from a little flat space embosomed in hills. The fort has a fine outlook westward across Loch Craguish, through the Gulf of Corryvreckan, and southward over Crinan Loch down the Sound of Jura. The site is 1 mile W.N.W. of the last, 2 miles west by south of Kilmartin Church, and 500 feet above the sea.

The whole top of the knoll, which is somewhat square, is occupied by the fort (plan, fig. 9). The interior measures only 35 by 33 feet, and has been fenced by a wall 8 or 9 feet thick, parts of which still stand on all sides to a height of several feet, particularly on the S.W. (fig. 10). The entrance is seen in this view, formed by a rock on one side and a wall on the other. It slopes upwards, and is narrowed from 3 feet to 2 feet at the outside by a projection from the wall, shown in the sketch. This entrance wall, $3\frac{1}{2}$ feet thick, is very well built, and has not been boarded into the wall of *entrance*. As, moreover, the sketch shows that the stones of which it is composed are smaller than those which constitute the wall of the fort, it seems probable that this entrance wall is a recent construction. The surface of the interior is covered with low mounds, overgrown with heather and dwarf willow. A little burn courses round the east and south below the fort, about 50 yards from the walls.

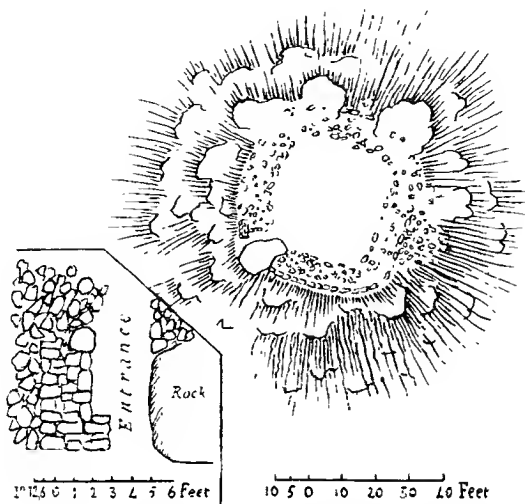


Fig. 9 Plan of Fort near Loch Michean, Kilmartin.



Fig. 10. Entrance to Fort near Loch Michean.

7. *Duntroon*.—Near the shore at the head of a little bay on the north side of Crinan Loch, $2\frac{3}{4}$ miles S.W. of Kilmartin Church, and $\frac{5}{8}$ mile

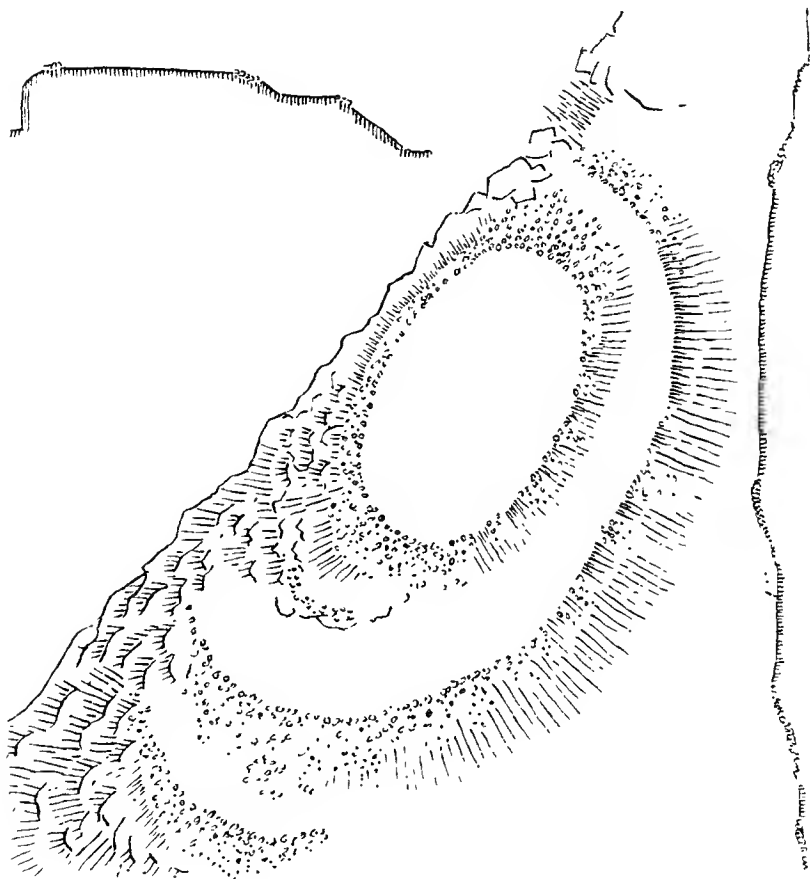


FIG. 11. Plan of Duntroon, Crinan Loch

E.N.E. of Duntroon Castle, the next fort stands on the top of a rocky eminence, 90 feet above the sea, which is less than 100 yards off.

The western side of the fort (fig. 11, taken mainly from the O.M.)

rests on the edge of a straight mural cliff, 15 to 20 feet high, looking down on a smooth grassy hollow. The opposite side descends steeply to a field, the slope being interrupted, 7 to 10 feet below the top, by a terrace 40 feet wide towards the south, but narrowing northward, and gradually disappearing at the north end. The northern end of the interior is 15 to 20 feet above a narrow flat separating it from a very small, low knoll; and the southern end is about 50 feet above the road, the ascent here being rough, rocky, and rather steep.

The oval interior, measured with tape, is about 130 by 85 feet, and has been enclosed by a wall, of which abundant debris, 20 to 30 feet wide, lies at the ends. There is less at the sides, and to the west the wall at the top of a little slope to the cliff edge has evidently been less strong. A rocky projection from the interior upon the terrace at the S.W. corner has had a subsidiary wall. The terrace has also been fenced by a wall, as strongly towards the south as the upper *enceinte*; and still further down to the south there appears to have been a small annex also defended by a wall of which the debris is 25 feet in width. Slight remains of rude building of smallish stones are visible in a few places, but I saw no facing stones. There are obscure evidences of entrances at both ends. The total length of the work I made to be 380 feet, which agrees with the Ordnance Plan, except that the annex is not given there.

This fort is marked "vitrified" on the O.M. The first notice of it as such appears to be by Canon Greenwell (*Proc. S. A. Scot.*, 1868, vol. vi. p. 338): "A vitrified fort at Duntroon, though considerably destroyed, has still sufficient remains left to show the peculiar character." In the same volume, p. 351, the Rev. R. J. Mapleton mentions "the vitrified fort referred to in the paper by Mr Greenwell"; and Dr Angus Smith (ix. 1872, p. 407) says: "This fort is well seen in the woods, as shown me by Dr Mapleton: it is vitrified." Captain Thomas, R.N. (xiii. 1879, p. 35) speaks of it as "the vitrified fort near the present Duntroon." And Miss Maclagan ("Hill Forts," etc., p. 42) says: "At Duntroon on the sea coast stands a vitrified fort."

All these authorities perhaps did not speak from personal knowledge, but the evidence of vitrefaction, if vague, seems to be sufficiently strong. I was surprised, therefore, that I did not notice any among the extensive stony debris traversed in the course of my measurements: but I did not look very carefully for it, and I am informed by Dr Alex. Munro that he saw a considerable quantity in the debris of the western wall, which I did not examine. The wall here is at the top of a steep little slope to the edge of the precipice, and probably was intended to prevent falls over the precipice rather than for defence, which was sufficiently provided

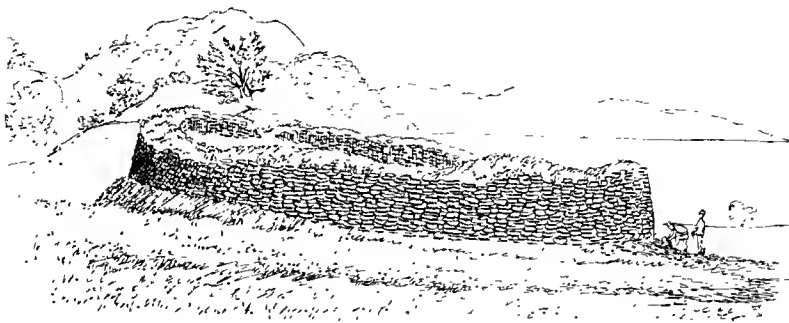


Fig. 12. Fort at Ardifuar, Crinan Loch, Kilmartin.

for by the mural cliff. If by a "vitrified fort" we mean one in which vitrified walls seem purposely to play an important part in the defence, it still remains to be proved that Duntroon is entitled to that designation.

Dr Angus Smith and Captain Thomas express the opinion that this fort is the *Dun Treon* of the *Tale of the Sons of Uisneach*, and it seems likely enough.

8. *Ardifuar*.—Rounding first the bay westward from the last, and then a second sequestered bay, marked *Gallanach* on the O.M., the track leads over a low ridge to Ardifuar farmhouse, close to the west of which, 100 feet above the sea, stands a remarkably well-preserved fort (fig. 12). It is 1 mile W.N.W. of the Duntroon fort, 3 miles W.S.W. of Kilmartin Church, and 500 yards from the sea to the S.S.W. at the

head of the third and most westerly bay on the north side of Crinan Loch.

Its position is unique among Argyle forts, as it has absolutely no natural strength, being situated on smooth and nearly level ground at the foot instead of on the top of a rocky knoll called *Dun Fheidh* (plan, fig. 13). An almost circular wall encloses an area 67 to 69 feet in

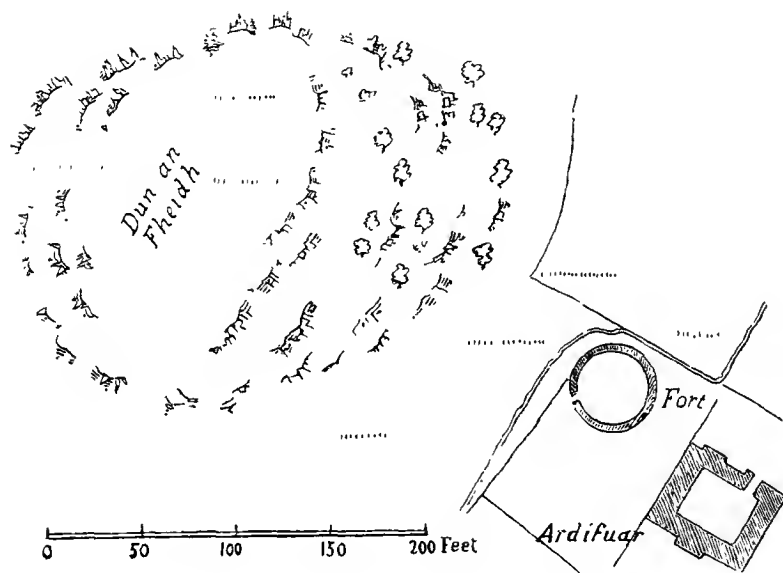


Fig. 13. Plan of Fort, etc., at Ardifuar.

diameter, which I could not examine properly, as it was covered with a dense growth of nettles 5 feet high, and was partly in use as a midden.

The inner face of the wall stands to a height of about 6 feet all round, and has a scarcement 2 feet above the present bottom, which, however, is formed by accumulated rubbish. The outer face also is probably standing all round, but is obscured by rubbish on the south side. On the opposite side it is quite free, and is in good condition. Its height is greatest on the N.W., where, outside, at the two highest points it

measured 9 feet 3 inches and 10 feet 2 inches, and had a batter of 1 in 10. The width of the wall varied at the present top from about 9 feet to 6 feet 2 inches. The over-all diameter is about 85 feet.

Two openings at present give access to the interior. One of them, on the south-west, is evidently an original entrance, but was so choked with rubbish that I could not examine it properly. On the right hand is a roofless chamber in the thickness of the wall. I could see no signs of the covered way from this entrance into the area mentioned and figured by Miss Maclagan (*op. cit.*, p. 42, Pl. XIX.). The opposite opening is probably recent, but requires examination.

Miss Maclagan calls this "the Broch of Ardafure." But there are grave objections to accepting it as a broch. First, there is its great interior diameter. Of some fifty measured brochs recorded in our *Proceedings*, the largest is 12 feet less in diameter, and that is the Lowland example *Etinsbold*, which itself exceeds all the others by 12 feet. Secondly, there is the thinness of the wall. Only three of the fifty brochs have a wall so thin as 9 feet. Generally the wall is at least 12 feet thick. At Ardifuar in one place it is only 6 feet 2 inches. This is about 9 feet up, but even allowing a foot for the batter, the width of this part at the base would be two feet less than that of the narrowest broch wall yet recorded.

The only known broch in Argyle is *Tirefour*, on the island of Lismore, and it is certainly remarkable that the only instances of the termination *fuar* or *four* to place names in the county, I believe, are of these two forts, one of which is a broch, and the other has been supposed to be one. The derivation of *Tirefour*, according to the late Rev. Dr Stewart of Ballachulish, is from *tur*, a tower, and *foor* or *fuir*, an older form of *foir*, help or safety. It is difficult to see the applicability of the prefix *ard* to a fort on almost level ground. But there is a hill 451 feet high, half a mile north of the fort called *Binnein Ardifuar*, and it may be a question whether the name did not originate there, was afterwards applied to the farm, and never had anything to do with the fort.

On the whole, we may conclude that Ardifuar is more analogous to the

forts on the island of Luing, although these are oval, and to the Irish stone forts, than to the brochs.

9. *Near Ardifuar*.—About 400 yards N. of the last are the remains of another circular fort, which Mr Mackie describes as being on the tableland of a high peak in view of the fort at Ardifuar. It is from 50 to 60 feet in diameter over all. The walls are nearly levelled. On a ledge of rock lower down something like a breastwork can be made out.

B—FORTS IN THE PARISH OF KILMICHAEL GLASSARY.

10. *On Binnein Mór*.—A mile and a half N. by E. of Glassary Church, and 553 feet above the sea, this fort stands at the end and on the highest point of a narrow rocky ridge, which gradually rises till it arrives midway between Lochan Tor a Bheallaich and Lochan na Corra, two little sheets of water about $\frac{2}{3}$ of a mile apart. The name of the first of these lochans is possibly derived from the fort, which commands the pass from the middle part of the valley of the Add to Rudale and the lower part of the same valley.

The interior is a nearly level grassy space of 130 by 100 feet, but it is divided by three rocky rises into a kind of terrace that runs round the ends and one side (fig. 14) and a squarish space on the other side. These spaces, however, freely communicate by passages between the rocks. Ample grass-grown debris shows that a wall had defended the terrace all round, although the ascent is here very steep and almost precipitous. The square space is defended by a mural cliff, except at one point, which, though almost inaccessible, is blocked by the remains of a wall. The entrance is at one end of the terrace. From the imperfection of my notes, I am not sure if the orientation in the plan is correct.

11. *Torrabhlairain*.—Three-quarters of a mile N.E. of Kilmichael Glassary Church this fort stands near the south end and on the highest point of an isolated ridge that rises conspicuously about 700 feet above the wide plain of the Add and 285 feet above the sea (plan, fig. 15). The fort consists of a central circular part, surrounded at a somewhat lower



Fig. 14. Fort on Banem M6, Kilmichael Glassary.

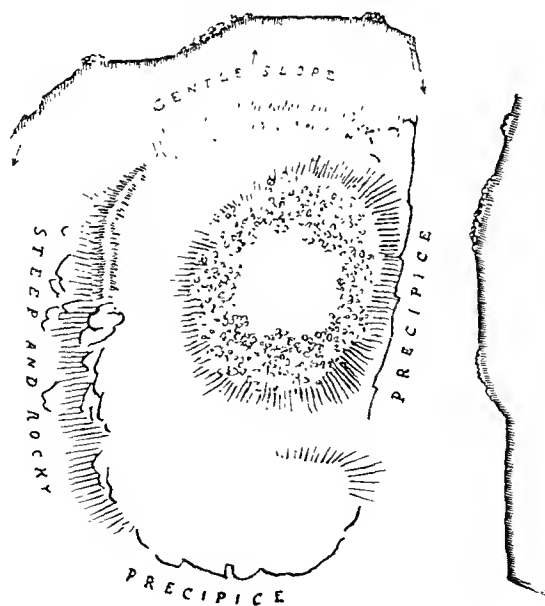


Fig. 15. Tortabblaran, Kilmichael Glassary.

level on three sides by a terrace, the whole coming on the east to the straight edge of a precipitous descent, which has at the top a natural *château de frise* of decomposing diorite rock (see fig. 1, p. 124 of this volume). Natural strength also amply protects the south and west sides by precipices and steep ascents, but the approach along the ridge from the north is easy.

A quantity of debris all round the main work indicates a wall, which had perhaps formed a circular or slightly oval tower, from which the name "tower of the plains" may have come; but apparently the wall has been much wider at the north and south ends than at the east and west sides. A mound with debris suggests a wall of less strength for the terrace, from the north as far round the west as was necessary, till nature took up the defence. There is an entrance from the N.W. through the terrace wall, but I could not perceive any in the central wall.

The dimensions over all are about 140 by 90 feet. The diameter of "the tower" is not easily made out. It may have been about 35 by 40 feet. Pacing round the middle of the debris brought out about 150 feet.

12. *Dunmore* at *Dunamuck*.—Two miles S.W. of *Torrabhlairan*, at the south side of the river Add, which is 600 yards distant, this fort stands on a knoll, close to, but separated from, the hilly ground to the south, between it and the Crinan Canal, and projected on the plain that slopes gently to the stream. The knoll is rough and rocky, though not inaccessible, rising 80 or 90 feet above the plain, and 130 above the sea.

The fort occupies the nearly circular flat top (plan, fig. 16), and as far as I can make out in its very ruinous condition, measured about 40 feet from north to south and somewhat less from east to west, and had been surrounded by a single wall, of which only a slight mound a foot or two in height survived. In one place where the soil had been removed I could see a rude building, 7 feet wide, deprived of its facing stones. The only entrance is by a comparatively smooth ascent from the east. At a lower level by 6 or 8 feet, a narrow level tongue runs southwards

for about 60 feet along the top of the lower part of the knoll. This space has apparently not been fortified, and a row of rocks gives natural strength to the east side only.

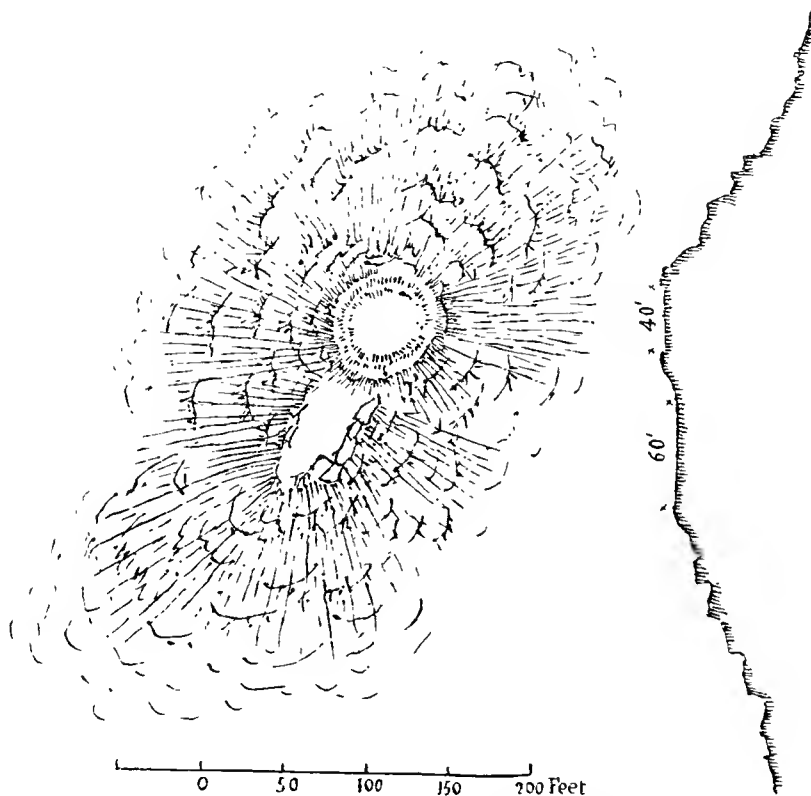


Fig. 16. Plan of Dunmore. Dunamuck. Kilnichael Glassary.

13. *Dunald; its history.*—Dr W. F. Skene in 1850 gave a lecture at Poltalloch, which first drew Dunald from the obscurity under which it had lain for many centuries, and in 1876 he published in his *Celtic Scotland* a history, constructed from the bald notices of the early annalists, to the following effect. Dunald was the capital of Dalriada,

which Dr Skene apparently inferred from the important events recorded as happening there. About A.D. 640, or less than a century and a half after the settlement of the Scots in Dalriada, Dunadd must have been deprived of its status as an independent capital, because the kingdom then passed under the sway of the Britons, and during the next forty years the Scots appear to have had no common king, but each tribe was ruled by its own chief under the sway of the Britons, both Scots and Britons being subject to the Angles. From this subjection Fearchar Fadha, chief of Cinnel Baedan, rebelled, and with Bredie, king of the Picts, besieged Dunadd A.D. 683, but the attempt failed. Two years later, however, the independence of both Scots and Picts was secured by the destruction of King Egbert and his army by Bredie at Dunnichen. Dunadd would thus regain its position as capital of the Scots, but fifty-one years later (A.D. 736) it was besieged and taken by Angus MacFergus, king of the Picts. History is silent as to its fate for the next century, but it must have lost much of its importance after 843, when Forteviot became the capital of both Scots and Picts under Kenneth MacAlpin, King of Alban.

Passing to romance, Dunadd has been connected by Skene and others with the *Tale of the Children of Usnach*, in which the sons of Usnach are called "the three dragons of *Dunmonadh*," a name for Dunadd derived from the *Monadh-mor*, or great moss, upon which the fortress stands so prominently. According to the generally-received date of the events on which that tale is founded, this would carry back our knowledge of Dunadd to the beginning of the Christian era. Dunadd has also been identified by the same authorities with the *Dunmonaith* in the *Tale of the Battle of Maigh Rath*, which records events of date 637.

Description.—The only published description of Dunadd is by Captain F. W. L. Thomas, R.N. ("Dunadd, the Place of Inauguration of the Scottish Kings," *Proc. S. A. Scot.*, 1878, vol. xiii. p. 24), but he was chiefly concerned with the "footmark" on the top of the rock, on which he believed the kings stood at their inauguration, and his brief description of the fortress is destitute of plan or drawing. To record more ade-

quately a place of such pre-eminence in our early history has been my endeavour in the account now offered, and if I cannot claim strict accuracy for my hasty plan, I trust that in conjunction with the sketches a fair idea of this ancient fortress may be given.

The position of Dunadd as the capital of the lengthy, straggling kingdom of Dahriada was not ill-chosen, being at the junction of the two sub-provinces of Lorn and Kintyre, the latter of which at that time extended as far north as the Crinan Loch; but it was rather open to attack by a force landing at Lochgilphead, which in a two hours' march could reach it by a route offering no physical difficulties. It is true, three forts, if they were contemporary, had to be passed on the way—Dunmore at Lochgilphead itself, Dunnamaraig near Cairnbaan, and Dunamuck, but these could only hold such small garrisons that, according to our modern ideas, they could easily be masked by a force operating against Dunadd, if they could not be at once stormed.

The actual site is where the spacious cultivated vale of the Add merges into the *Mona-hmor* or "great moss," a dead level upwards of two miles square, meandering through which the river Add finishes its course in the Crinan Loch. Here, the bare isolated rock on which the fortress was built rears itself abruptly to a height of about 160 feet above the moss and 176 above the sea. The rock of Dunadd bears no little resemblance to Dumbarton rock, as they both rise with startling abruptness to a double-headed top, from a dead level of the sea in one case and the moss in the other. The channel of the Add, which flows close by on the north, is sunk several feet below the moss, which is here only 14 feet above the sea, so that possibly the river may have been navigable for small vessels of old, as far as Dunadd, where the effect of the tides, indeed, is still felt, although the sea is two miles distant in a straight line.

The whole rocky elevation stands on a space of about 1000 by 650 feet (chart, fig. 17), including a low plateau on the south and a high one on the south-east. Deducting these, the precipitous height that strikes the eye covers 750 by 300 feet. Viewed from the north-west, it presents

an all but inaccessible face, rising to a haunch on the south and to a rounded peak on the north (fig. 18). On the opposite side, the haunch descends steeply to a hollow plateau 30 to 40 feet below, seen in the view from the north-east (fig. 19). This plateau and the haunch above it are apparently the only parts of the rock and its surroundings that



Fig. 17. Plan of Dunadd, from the 25-inch O.M.

have been fortified, and they may be described as the upper and lower forts.

Upper Fort.—The upper fort occupies the whole of the narrow haunch, or southern summit, except perhaps a gentle slope about 50 feet long at the south end (plan, fig. 20), which shows only doubtful traces of fortification. North of this, on the very summit, is the main work, an oval level space of 80 by 50 feet, or only 40 feet if we exclude a slight slope preliminary to the steep one on the east. It is well defined by the nature of the

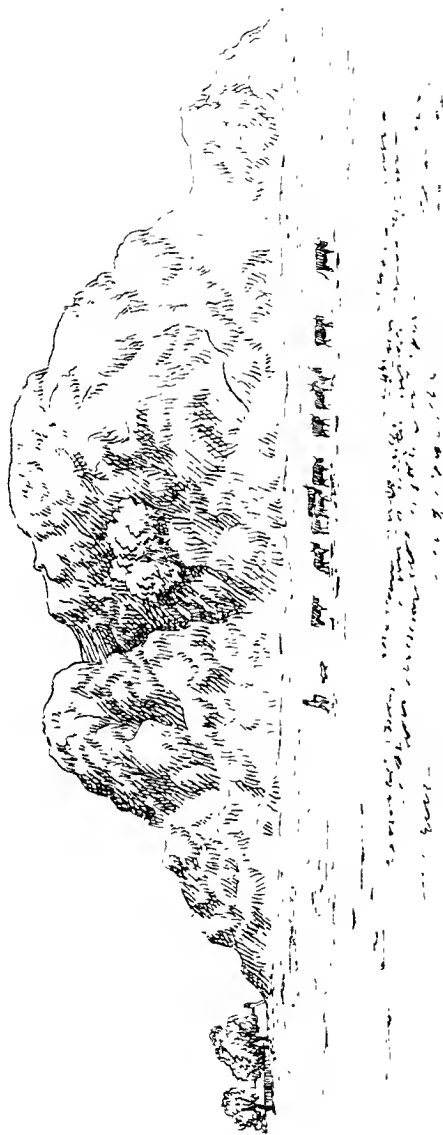


Fig. 18. Dmadd, on the Monadh Mor, from the N. W.



Fig. 19. Dmadd, from the N. E.

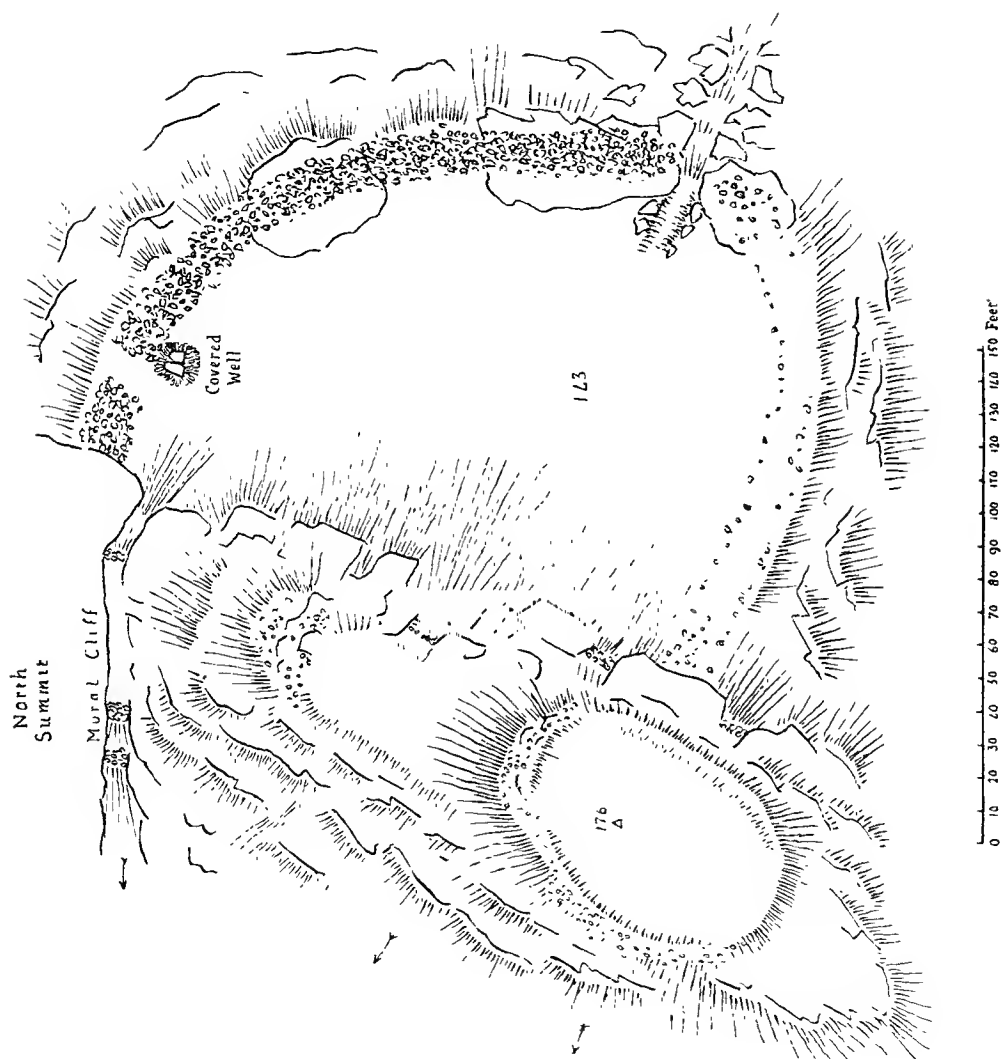


Fig. 20. Plan of upper and lower forts, Dunadd.

ground, but shows debris of a defensive wall only on the west and north. At the north end the walling is helped out by little rock faces, beyond which a slope leads to a second narrow level space 40 feet long. Walling and rock defend the north end of this also, at the top of a rough descent, 20 feet in height, to the very narrow neck, only a few yards wide, which separates the haunch from the mural wall of the peak. The length of the fortified top to the neck is about 250 feet.

The approaches to the upper fort (fig. 20) are (1) from the west, by the little ravine between the haunch and peak, only two or three yards wide near the level neck, where it is barred by remains of two walls: (2) from



FIG. 21. The upper fort, from near the entrance to the lower fort, Dunadd.

the east, by (*a*) an ascending narrow passage between mural rocks, from the north end of the lower fort to the neck, where it is barred by a wall: (*b*) by a wide grassy ascent from the middle of the lower part to the second or lower fortified space above, barred, where it passes between rocks near the top, by a wall: (*c*) by a steep ascent from the south end of the lower fort to the north-east corner of the first or upper fortified space, likewise barred by a wall: (*d*) by a difficult ascent outside the lower fort, also barred by a wall. These barriers, as we now see them, may be modern, but almost certainly stand on ancient foundations. They are shown in the outline views of the north and south parts of the fort, taken from near the entrance of the lower fort (figs. 21 and 22).

Lower Fort.—The lower fort occupies a plateau or irregular hollow, strewn with rocks and boulders, on the east side of the upper fort, and from 30 to 40 feet below it. The ground falls considerably northward, and is dominated and completely protected on the west by the haunch. To the east the limit is the semicircular crest of the plateau, which can only be reached from below by winding about through the numerous little mural cliffs that break the ascent. Thus an assault in close order

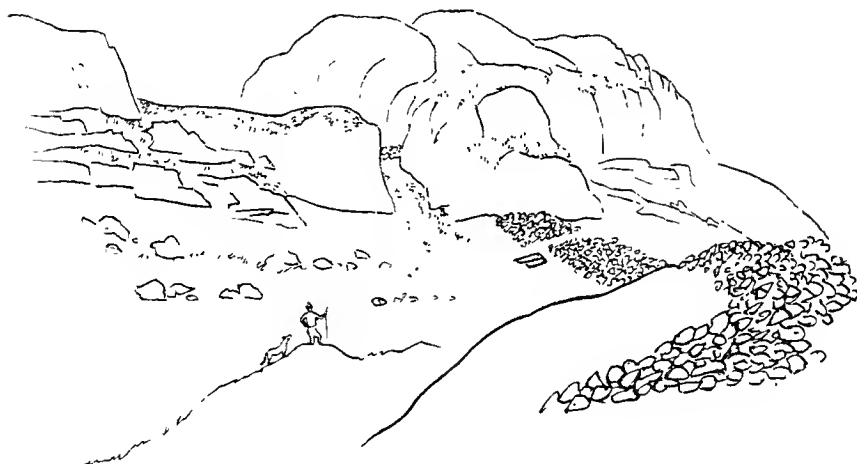


Fig. 22. North summit of Dunadd, and north approach to upper fort.

could not be made, but, on the other hand, abundant shelter would be afforded to scattered assailants.

A single wall has been drawn round the crest, abutting on the north on the foot of a mural cliff of the peak, close to the neck which separates the peak from the haunch (figs. 20 and 22), and on the south on another cliff under the middle of the main work of the upper fort (figs. 20 and 21). The debris of the wall is 20 to 25 feet wide, but its original width I could not determine, as only a small piece of the outer face is exposed. This is about 80 feet north of the entrance, and is only 6 feet long and

3 high (fig. 23). The stones are of no great size, but Captain Thomas saw, *in situ*, for a length of about 30 feet, foundation stones of large undressed blocks, one of them 5 feet long, on the south side of the entrance, where now almost all trace of the wall has disappeared.

The only original entrance to the lower fort is about a third of the way from the south end by an ascending passage through a natural gap about 60 feet long, and 8 to 9 feet wide, between mural rocks 6 to 9

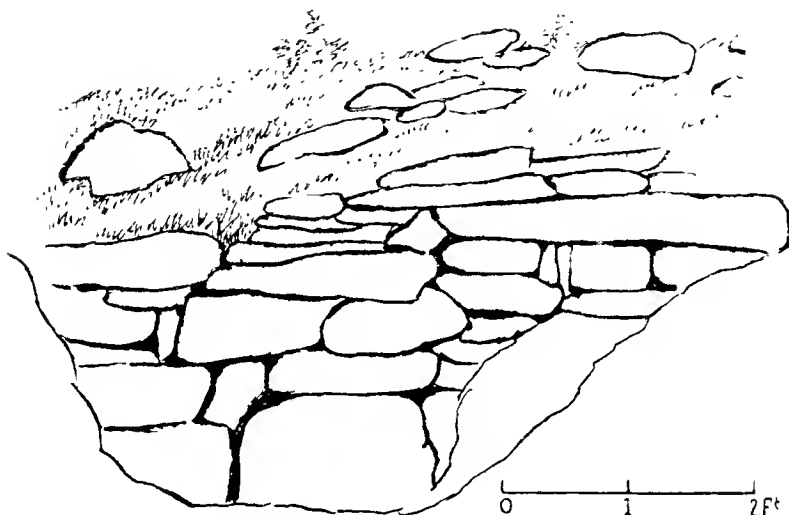


Fig. 23. Remains of outer face of wall, Dunabl.

feet high, which is prolonged about 20 feet further into the interior by a shallow hollow way. In fig. 24, the passage is shown from its lower end. The interior of the plateau is not seen, as it is below the level of the eye, but the figure in the distance is at the far side of the plateau, climbing the middle passage to the upper fort, through a gap which is in fact the continuation of the lower gap. Captain Thomas suggests that the passage may have been roofed, so as to carry the wall across.

Another passage through the wall, only 20 feet from its north end (figs.

20 and 22), is believed to have been made to give access to the well from the farmhouse below, but the well has long been closed and covered with two heavy slabs. The well is close to the inside of the wall (figs. 20 and 22), and is surrounded by a curious pavement of small thin stones set on edge and radiating outwards (fig. 25).

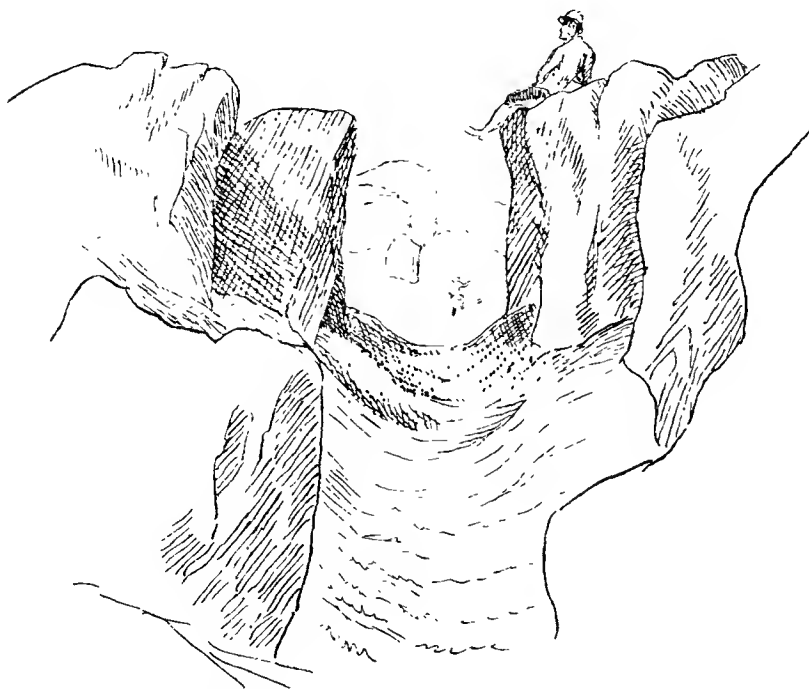


Fig. 24. Natural cleft, giving access to lower and upper forts, Dunadd.

No remains of hut circles or other buildings are to be seen within the forts or on the skirts of the hill.

The supposed "footmark" in the rock near the top of the upper fort has been so fully dealt with by Captain Thomas that I need only refer the reader to his account. A few yards from it a circular cup, 10 inches in diameter and 4 inches deep, is also carved in the rock.

14. *Dun na Maraig*, near Cairnbaan.—Retracing our steps up the valley of the Add, passing Dunannek, and crossing into the wide vale that runs from Cairnbaan to Lochgilphead, we come upon this fort on the north side of the vale, half a mile east of Cairnbaan Inn, $1\frac{3}{4}$ miles N.N.W. of Lochgilphead Church, and $\frac{1}{2}$ of a mile W.N.W. of Auchnabreck farmhouse. It is not marked on the O.M. A wooded ridge, 450 yards long, and running more nearly north and south than the ridges of the district customarily do, rises from level ground on the south, at first

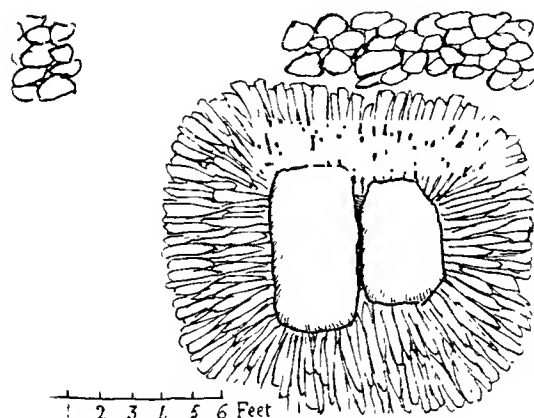


Fig. 25. Ground plan of covered well and surrounding pavement, Dunadd.

gently, but near the north end steeply, with rough precipitous slopes to north, east, and west. Here on the top the fort stands, about 150 feet above the low ground and 252 above the sea.

The north and east sides, practically inaccessible, show no sign of having been fortified, but a strong wall now ruined has protected the south and west sides (plan, fig. 26). The debris is from 10 to 20 feet wide, and contains many good-sized and even large stones. East of the entrance, which is in the middle of the south end, the wall climbs rather steeply over a rocky slope to end on the east side. The defence of the wall is much aided by the nature of the ground, and particularly on the

south and south-west, by the little cliffs, which, whether only a few feet or a few yards in height, invariably turn a perpendicular face to the outside. On the south-east the wall stands above a very broken rock

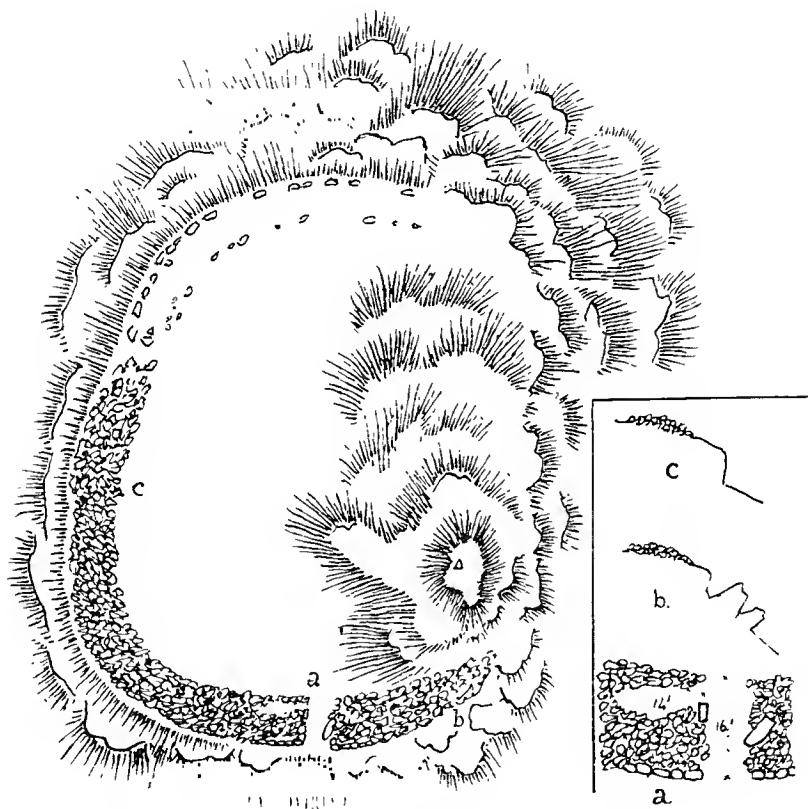


Fig. 26. Plan of Dun na Maraig, near Cairnbaan.

face, as in section *b*, fig. 26; on the west it is slightly retired above the little cliffs, section *c*; and on the north-west it is above a row of stones, shown in the plan, which, artificially laid as they seem to be, are, I believe, naturally placed.

The entrance (ground plan, *a*, fig. 26), although ruined, can be made out with some certainty to be 16 feet in length and 6 in width. Two or three courses of masonry at the foot of the wall are quite distinct for several yards on either side of the entrance outside; two stones one above the other, 2 feet in length, are *in situ* on its west side; and a stone, 5 feet 6 inches long, lies displaced on the east side. On the west side, near the north end of the entrance, there is something like a broken-



Fig. 27. Dunmore, Kilmory, Lochgilphead. From the 25-inch O.M.

down chamber in the wall, extending with its passage about 14 feet in from the entrance, but excavation is required to prove whether it is so or not.

The interior measures about 145 by 115 feet, but the western half is almost entirely taken up with a rocky knoll, which rises to its highest point close to the south-eastern end of the wall as shown in the plan.

15. *Dunmore*, Kilmory, Lochgilphead.—A mile and a quarter S.E. of Lochgilphead Church, half a mile E. of Kilmory House, and 200

yards N. of the farmhouse of Dunmore, this fort stands on a knoll 60 or 70 feet high, the top of which was covered with such a tangled mass of bracken and briers, concealing rocks and stones, that investigation was difficult and even dangerous, and I could not plan, or even see, the remains. I therefore give the plan (fig. 27) from the 25-inch O.M., which shows that the site is on a narrow knoll about 200 yards long, pointing N. by E., with a top about 120 yards in length and somewhat constricted in the middle. The fort is on the southern half of the top, and measures on the map about 150 by 80 feet over all. It has had apparently a single wall, of which considerable debris remains except at the south end. The height above the sea is about 350 feet.

16. *Dun Dubh*, at Tom Dow, Lochgilphead.—Three-quarters of a mile E.S.E. of the last, 1 mile N. of the point *Rudha Grabhard*, and $2\frac{1}{4}$ miles E.S.E. of Lochgilphead Church, the site of a fort is marked on the O.M., as a mound close N.E. of the cottage or farmhouse of Tom Dow, about 200 feet above the sea. I could see no remains of a fort on the spot or anywhere near it, and apparently all signs had already disappeared when the O.S. was made.

C.—FORTS IN NORTH KNAPDALE, WEST SIDE OF LOCH SWEEN.

17. *Baranloisgan*.—The slight remains of this fort are 15 yards south of "Cairn Baranloisgan" (O.M.), 300 yards west of the farm of the same name, and of the south end of Lochan na Cailliche; a mile and a quarter S.W. of Island Add Bridge, Bellanoch. The position has little natural strength, the approaches from the north and south being along the level top of a ridge, above which the site is raised only about 6 feet, and the slopes to east and west are short. The fort stands 160 feet above the Lochan, and 286 above the sea.

The oval interior (fig. 28) measures about 80 by 45 or 50 feet, but the east side, which is the steepest, shows no remains of a wall. A mound on the west probably conceals the remains of a wall which at the south-east corner shows itself distinctly enough, the outer face in one place having three courses of masonry still in position. The entrance is at the

north end, and is much broken up, but has been apparently formed on the west mainly by natural rock, and on the east by a wall.

A curved mound crosses the west side of the interior, and joins on to the mound or wall of the *enceinte*. Possibly this is the remains

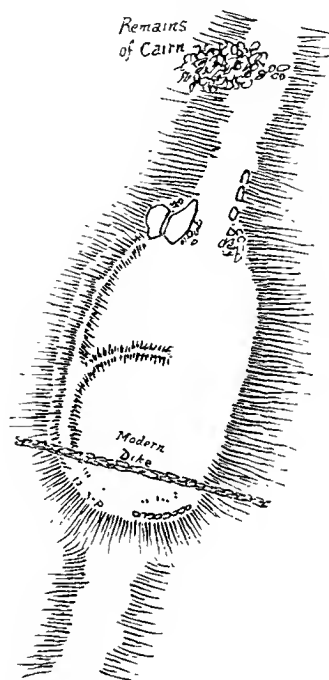


Fig. 28. Fort at Baraniosgan, near Bellanoch, N. Knapdale.

of a round tower, about 40 feet in diameter inside, at the south end of the fort.

The cairn appears to be much dilapidated, and is reduced to a low, irregular mass of stones extending about 30 feet across the ridge, 15 yards north of the entrance to the fort.

18. *Fort on Drùim an Duin*.—This fort has an important position at the head of the pass from Crinan Loch to the west side of Loch Sween.

It stands 300 feet above the sea on the north end and highest point of a long ridge, where the road makes a sharp bend before its steep descent to Caol Scotnish, the western head of Loch Sween. The debris of its

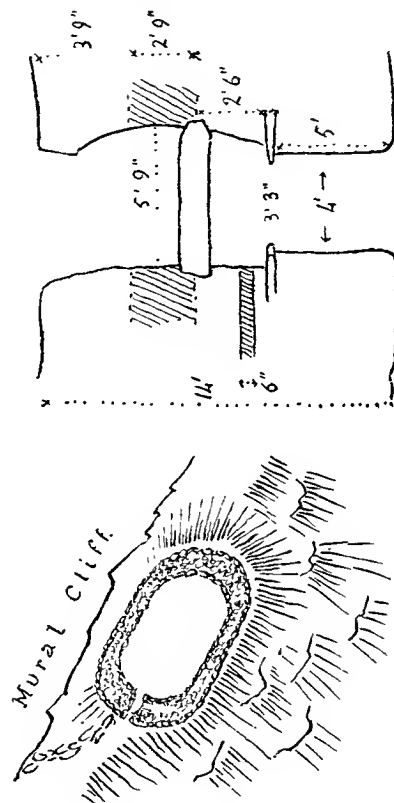


Fig. 29. Fort on Druin an Duin, near Bellanoch, and its entrance.

east side is conspicuous from the road 100 feet below, before it bends to the south. The site is $1\frac{3}{4}$ mile S.W. of Bellanoch, $3\frac{1}{2}$ N.E. of Tayvallich, and $\frac{3}{4}$ N.E. of the head of Caol Scotnish.

The ridge is about half a mile long, with a comparatively easy slope on the east side, which rises, however, almost to a knife edge formed by

the precipitous descent to the west. The approaches to the fort are along the knife edge, but are not steep. The view down Caol Scotnish and Loch Sween is extensive, but to the north is obstructed by near hills.

The interior inclines slightly to the east, and is grassy. It measures 53 feet north to south and 33 east to west, and is oval, but with nearly straight sides and well-rounded ends (plan, fig. 29). The wall stands all round, visibly to a height of from 2 to 6 feet, but if debris were removed would be found to be higher. Its width contracts from 14 feet at the

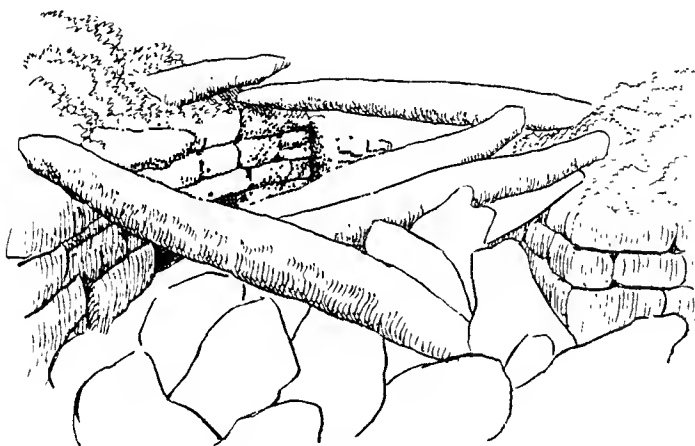


Fig. 30. Entrance to fort on Druim an Duin.

ends to 6 or 7 at the sides. I could see no signs of an entrance on the north, but that on the south seems to be in nearly perfect preservation, though encumbered with debris. The view, taken from the inner end (fig. 30), and the ground plan (fig. 29), show that it bears a close resemblance to the broch entrances. From the outside a straight passage, 5 feet long and 4 feet wide, leads to projecting stone checks, narrowing the entrance to 3 feet 3 inches. Behind this, the door, probably of stone and perhaps still existing in the debris, would be placed, and 6 inches behind the check the bar-hole, 6 inches square, remains running deep into the wall on the west side. Inside the checks the width of the entrance is

about 5 feet, and it gradually increases to 5 feet 9 inches, owing to a curve on the east side, the west side being apparently straight. About half-way along this inner part of the entrance, the top of a doorway on either side can be seen, leading, no doubt, to the customary guard-chambers: the lintel of the one on the east side is 3 feet 9 inches long, and the doorway 2 feet 9 inches wide. One of the roofing-slabs, nearly 6 feet in length, remains *in situ* over the inner passage, and several others, as shown in the view, lie amidst the debris with which the entrance is blocked to a height of 3 or 4 feet. To all appearance, if the debris were removed the walls of the entrance would be found to be perfect, and as I could pass my stick freely along the openings to the guard-chambers, these might prove to be still uninjured, particularly as there is no appearance of falling in on the wall, above where they should be. Altogether this fort is probably one of the best preserved in Argyleshire, and is well worthy of a complete excavation.

19. Fort on *Eilean na Circe*, Caol Scotnish, Loch Sween.—This island fort is $2\frac{1}{4}$ miles N.E. of Tayvallich Church, and $\frac{1}{3}$ of a mile from the head of the very narrow western arm of Loch Sween called Caol Scotnish. It is 100 yards from the eastern and 175 from the western shore of the Caol. The island is a mere rock rising from deep water some 15 to 20 feet above high tide, and the only access is by a landing-place on the west side.

It is a question whether the remains of building are prehistoric or mediæval, or partly the one, partly the other, as I am inclined to believe; but I could make only a very imperfect examination, as it was a very wet day, and the rock was covered with an almost impenetrable growth of bracken, briars, and scrubby trees. Indeed, but for the kind aid of Mr E. B. Bailey, of the Geological Survey, I could not have done anything.

The remains consist of an outer oval wall, enclosing a space about 120 feet long, and rectangular buildings occupying the interior for a length of 66 feet (plan, fig. 31). The outer wall is best seen, for a length of 40 feet, on its outer face at the north end. It is well built,

neatly rounded, stands several feet high, and is indistinguishable from ordinary prehistoric workmanship. It is continuous along the east side, rounds the south by a sharp, almost angled end, and about 30 feet to the north diverges outwards to the top of a little rock face almost at the water's edge. It seems then to have run, though but little now remains, close to the sea to the landing-place, beyond which it ascends to com-

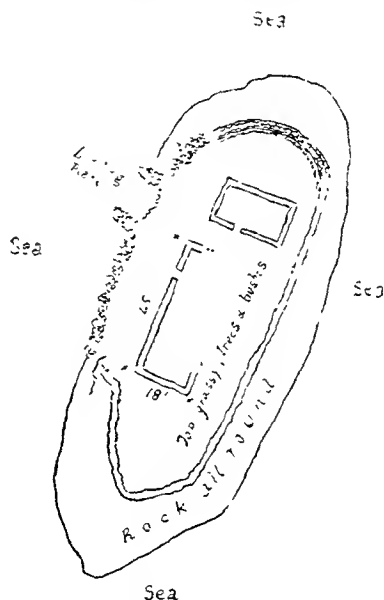


Fig. 31. Remains on Eilean na Cìrce, Caol Scotnish, Loch Sween.

plete the circuit at the well-preserved part of the north end. The landing-place is near the north end of the west side.

A short steep ascent leads from the landing-place to the rectangular buildings on the level top of the rock. One of these structures lies to the north, and measures about 20 feet from east to west by 14 from north to south. The walls are 2 feet thick, and there is a doorway about half-way along the south side. Separated by an interval of a few feet, and standing a few feet nearer the sea, another wall runs in a straight line in the same

direction as the west wall of the last; it is 46 feet long, and has an entrance 3 feet wide near the north end. The south wall of this building or enclosure was 18 feet long, but from the difficulties already adverted to, I could only trace the return on the east side for a few yards. The walls are several feet in height.

20. *Dun Beag*, Ardnackaig, Tayvallich.—This is the only fort marked on the O.M. on or near the Atlantic coast in this part of Knapdale. It is 2 miles due north of Tayvallich Church, 120 yards west of the farmhouse of Ardnackaig, and 230 yards east of the head of *Sailean na h'Earba*, a short narrow inlet of the sea. The scanty remains consist of a grassy mound 6 or 7 feet wide concealing the debris of a wall, round the oval level top of a green hillock, unusually free from rock, not more than 30 or 40 feet high, and 100 above the sea. The dimensions of the fort over all are only about 65 by 25 feet.

21. *Dun a' Chogaidh*, Tayvallich.—This fort looks down upon Loch a Bheallaich from the north at a distance of 300 yards, and is about one-third of a mile N.N.E. of Tayvallich Church. It is 305 feet above the sea, on the pointed top of a spur of Torr Mor (445 feet). The fort (fig. 32) occupies the whole regularly oval and level top, and measures internally 150 feet by 75 feet. The interior is pleasantly green and smooth, except for a low rocky knoll at the S.W. end, and another which crosses the area about the middle as a narrow band, nearly from side to side. The single wall, as far as can be seen, is entirely cast down, save a few fragments of the outside face at the S.W. end, but the debris is abundant and closely set, measuring 20 to 25 feet across at the ends and less at the sides. From the S.E. side the ground falls a few yards to the edge of a mural cliff, and the other sides have steep rocky descents 30 or 40 feet high. There is an entrance at the S.W. end, where from some imperfect indications I reckoned that the wall may have been 14 to 16 feet thick. There are some doubtful indications of another entrance at the N.E. end.

22. *Dun a Bheallaich*, Tayvallich.—As the last overhangs Loch a Bheallaich from the north, so does this from the west, at a distance of

300 yards, and it is the same distance west of the church. The knoll it occupies is steep and rocky on all sides, and is connected with a higher one to the south by a narrow neck 100 feet below the fort. The



Fig. 32. Dun a' Chogaidh, Tayvallich.

top is a pleasant level of smooth green turf measuring about 150 by 120 feet, and is 238 feet above the sea. "Fort" is marked here on the O.M., but all that seemed to be left was a green mound a few feet high with an entrance through it at the N.E. end.

23. *Dun Brìnaidh*, Tayvallich.—A track from Tayvallich to Barnshallig Farm leads to this fort, about 150 yards S.W. of the farmhouse, and 1500 S.W. of Tayvallich Church. The site is the top of a rocky knoll, steep on all sides and 30 to 50 feet high, 200 feet above the sea. The fort does not occupy the whole of the nearly level green summit, and its walls are much dilapidated and grass-grown. There seems to have been a main work measuring 42 by 21 feet inside the wall, with a small annex to the S.W., enclosed by a slight wall and divided into two parts by a rock. The total length of the work over all is 66 feet. It looks down on a rather extensive desolate moorland, with no sign of man's presence now or formerly, save a standing stone 200 yards off to the W.S.W.

24. *Dun Mhuirich*, Loch Sween.—On the Linne Mhuirich, a narrow inlet $2\frac{1}{2}$ miles long which runs parallel with Loch Sween on its west side. The fort is on a bay on the west side of and about half-way along the Linne, and is 2 miles S.S.W. of Tayvallich Church. By some mistake Miss MacLagan calls it *Dun Tayraellach*, confounding it with *Dun a' Bheallich*, close to the church (*op. cit.*, pp. 43, 44). The fort stands on an isolated rocky ridge rising abruptly from the flat and marshy strip of plain that runs along the coast at the foot of Dun Mor (367), half a mile to the east. Retired and deserted as the neighbourhood now is, yet it seems to have been well peopled formerly, as on the slopes of Dun Mor, or near them, six hamlets or farms, Barr Breac, Barr Beith, Druim-nan-gall, North Ard Beg, Barr Thormaid, and Kilmory, are marked on the O.M., all within half a mile of the fort.

As approached from the north, the fort on its rocky site comes suddenly into view at a turn of the road, presenting the remarkable aspect seen in fig. 33. The ascent is easy enough from the bay by the hollow shown in the sketch. But the east side rises sheer from the sea, and the west side and south end are so precipitous as to be practically inaccessible. Not less remarkable in appearance than the north end is the south end, which seems bound together by bands of rock, smoothed and polished by glacial action (fig. 34).

Seen from the ridge of confused disrupted rocks to the north (fig. 35), a curved outer wall, well built and 4 to 5 feet high in places, running down to the sea cliff on the east, enclosing a terrace on the west, and

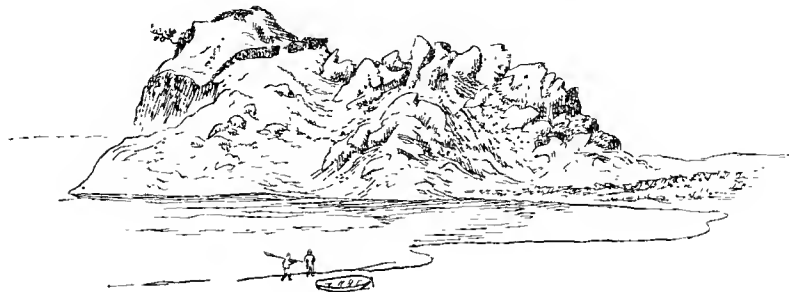


Fig. 33. Dun Mhuirich, Loch Sween, from the north.

having an entrance in the middle of its north face (sketch plan, fig. 36), with steps leading up to it, is a prominent object. It is 9 feet thick at



Fig. 34. Dun Mhuirich, from the south.

the entrance, narrows to 6 feet at the west side, and is a mere supplement to the natural defence of rock at the south end, where it runs out at the sea cliff. Towering above, and approached by climbing up a rocky spur, is the inner wall, more ruinous and without any visible

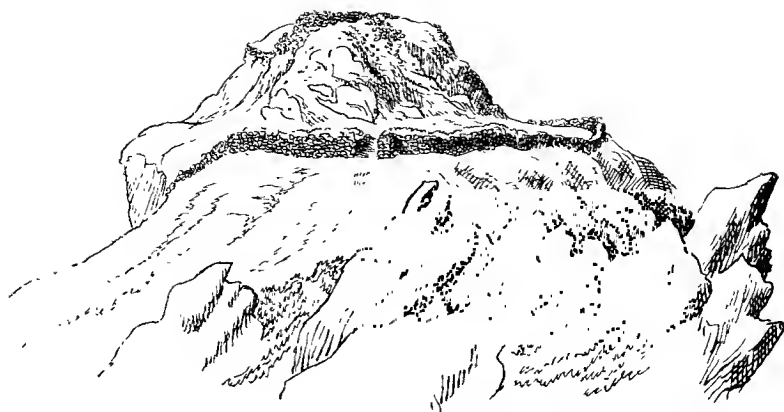


Fig. 35. Fortified terrace and upper fort, Dun Mhuirich, from the north.

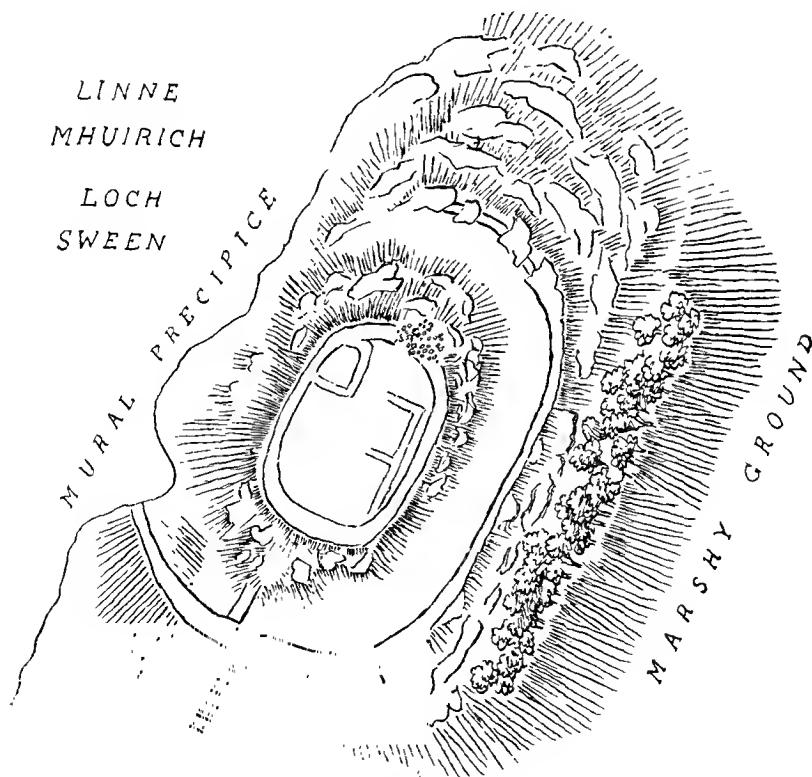


Fig. 36. Plan of Dun Mhuirich, Linne Mhuirich, Loch Sween.

entrance. This wall completely encloses the interior, and is 7 feet thick at the curved ends, but only 3 at the nearly straight sides. At the ends it is 5 feet high in places on the inside, and on the west side it is a foot higher. It is very well built of dry masonry. Miss MacLagan speaks of a third wall, but I could see no sign of it. Neither is there any place where another wall could easily be placed.

I found the level interior, measured by tape, to be 54 by 38 feet, although Miss MacLagan, in pursuit of her circular theory, calls it 60 feet in diameter. She also states that "the chief peculiarity of the fort is the still existing partition walls which have divided the central part into apartments. These seem all to have converged towards the centre, according to the usual division of round buildings." But her drawing does not show any such convergence, and as far as I could make out amid the dense growth of nettles and other weeds, the main foundation, about 2 feet high, is that of an ordinary rectangular building about 40 feet long, divided into at least two apartments and running parallel with the west wall of the fort, but separated by a narrow passage. From the fact of this building being rectangular and independent of the fort wall, it is probably a secondary structure, as the wall running from the entrance of the outer wall inwards may also be. In the S.E. corner of the area are remains of a building of a different type, and probably older, the north and west walls being straight, while those on the south and east are formed by the curved wall of the fort.

GENERAL REMARKS.

Sites.—The most usual site is the whole top of an isolated knoll, about 30 to 40 feet high, with a level oval summit, which has steep and rocky sides, often straight, one of them not infrequently a mural cliff, but is comparatively accessible at one or both ends. In other cases the summit of a ridge with similar characteristics is chosen. In a few instances, as *Dun Mhuirich*, *Dunobhl*, the local height is considerably more, but only at *Craig a' Chaquill* can it be called great. Quite exceptionally *Arlihuir* stands on low level ground.

Of necessity no fort in that part of Argyle can be very far from the sea, nevertheless not one of them is actually on the coast, with command of a natural creek or harbour, unless *Dun Mhuirich*, which projects into a bay.

Elevation above the sea.—This is rarely much above the height at which people commonly live in Argyle at the present day. Of the twenty-four forts, nine are below the 200 contour, six are between 200 and 300 feet, six between 300 and 500 feet. Of the three remaining, *Binnein Mor* (553) little exceeds the 500 line, and only *Tur a' Bhòlaich* (700) and *Creag a' Chapuill* (800) are at a considerable elevation.

Plans.—Generally very simple. In eighteen out of twenty-three forts, in which the plan can be made out, a space either oval, or oblong with straight sides and rounded ends, and only in three or four instances circular, is enclosed by a single wall. Additions of one or two annexes at one end, or of a terrace below one side but never extending to the other, occur at *Duntroon*, *Torrahlarain*, *Dunadul*, *Dun Brònaiy*, and *Dun Mhuirich*. The only circular forts among them are the two at *Ardifuir*, *Tur a' Bhòlaich*, and possibly *Torrahlarain* and *Baranloisgan*.

Size.—Generally small. Taking interior length as the simplest criterion, and including annexes, if any, four are under 50 feet, five between 50 and 100 feet, nine between 100 and 150 feet. The three others are considerably larger; *Dunadul*, upper fort 158, lower fort 180; *Duntroon*, including a broad terrace and an annex at one end, 320; but above all, *Creag a' Chapuill*, which may be as much as 750.

Walls.—There can be no reasonable doubt that the forts of the district were usually fortified by dry-stone walls, rubble-built in the middle, and faced with good masonry outside and in. Out of twenty-four, eight have walls still standing in places visibly as much as from three to six feet in height, and in four others a foundation course can be seen here and there. A very little excavation would no doubt reveal remains of the wall in other cases. Perhaps only in three or four is the dilapidation so great as to have destroyed all trace of walls.

The wall does not always completely enclose the fort: where the natural defence from mural cliffs or rocks is strong, the wall is usually, though not always, omitted. The thickness of the wall is usually greatest at the comparatively accessible ends, varying from 9 to 14 or perhaps 16 feet; at the sides it is reduced to from 3 to 6 or 7 feet. The height is almost always several feet greater on the outside than the inside, the wall being usually constructed on the slope, probably with the object of economising materials and increasing the interior area. There is distinct evidence of chambers in the wall at *Arliifuir* and *Druim an Duin*, and doubtful signs of one at *Dun na Maraig*.

Interior.—Compared with the rough rocky ascents, the interior is generally surprisingly level and smooth, but there is no evidence that this has been artificially produced, and similar tops of unfortified knolls frequently occur. In not a few interiors, however, rocks rise above the surface and greatly diminish the accommodation. As far as can be seen on the present surface, there is a total absence of primitive structural remains unless at *Arliifuir* (Miss MacLagan, *op. cit.*). The rectangular foundations at *Eilean na Cirre* and *Dun Mhuirich* are probably not prehistoric.

Entrances.—Usually distinct evidence of only one exists, but excavation is necessary to test doubtful indications of a second in several cases.

The inner wall of *Dun Mhuirich* does not seem to have had an entrance on the ground level. Generally the entrance is in the middle of one end. There are no traverses or other special protections to the entrance, save the natural covered way at *Dunadd*, the projecting buttress at *Dun Mhuirich*, and the contracted mouth (probably modern) of the entrance to the fort near Loch Michean. At *Druim an Duin* the entrance is apparently identical in structure with that of the brochs.

Water Supply.—As far as I could see, *Dunadd* alone has a well within the fortification. Probably there are springs within the large area at *Creag a' Chapuill*, but I had not time to look for them. In many cases, burns or little ranlets pass quite close to the knolls, but there are no covered ways from the forts to the water.

Names.—Not much more than half of the forts are known as *Duns*, with such qualifications as *Mor*, *Beag*, *Ahl*, & *Bhealich*, expressive of size or position : *Dubh*, & *Chogaid*, *Na Martig*, signifying other qualities. Three—*Brònaig*, *Mhic Choish*, and *Mhuirich*—bear proper names, signifying Bronag, son of Coas, and Murdoch or Murach. In one, the *Dun* gives a distinctive name to a ridge, *Druim an Duin*. In *Torrabhlarain*, the *Torr* may signify tower or fort, but may mean the knoll on which it stands. Likely enough the forts that are now nameless were once known as *Duns*, but the appellation has been forgotten, a process which I found going on now.

History.—No mention is made in the early annals of any of the forts, save *Dunahall*, the scanty historical and legendary notices of which are given at p. 225.

Uses.—From the absence of wells or remains of buildings, it would seem that the forts were not regularly inhabited, but were merely temporary refuges in time of trouble. It may be rash, however, to come to this conclusion, because water may have been stored in skins or otherwise, and the dwelling of the period may have been of perishable materials. Indeed, that such was the case seems almost certain, because there is no trace of stone dwellings even at *Dunahall*, which was probably the capital of the Scots till the middle of the ninth century. Neither, from the nature of the ground, do I think that any remains of buildings would be found there by excavation.

Occupations of the People.—As the elevation of the forts is generally moderate, and as they are commonly near modern farmhouses, there seems no reason why the inhabitants should not have followed both pastoral and agricultural pursuits, but the almost universal inland position of the forts indicates that the people were not maritime, and did not strive for supremacy at sea.

MONDAY, 14th March 1904.

ROBERT MUNRO, M.A., M.D., LL.D., Vice-President, in
the Chair.

A Ballot having been taken, the following were duly elected
Fellows :—

JAMES ARCHIBALD FERGUSON, Banker, Leith.
ROBERT CAMPERDOWN HALDANE of Lochend, Ollaberrie, Shetland.
COLIN LEITCH, Ardrishaig.
Rev. CHARLES RICHARD PAXTER, M.A., LL.D., etc., Wickhampton
Rectory, Acle, Norfolk.

The following Donations to the Museum and Library were laid on the
table, and thanks voted to the Donors :—

(1) By Sir FRANCIS TRESS BARRY, Bart., M.P., Hon. F.S.A. Scot.

Lower part of a large Clay Jar (one of three), found in the broch at
Hill of Works, Barrock, Caithness. It measures $11\frac{1}{2}$ inches diameter
across the bottom and 12 inches in height to the highest part of the side
remaining, and is similar in form and material to the large jar from the
White Broch, Keiss, which is figured in the *Proceedings*, vol. xxxv.
p. 130.

Ninety-four large Photographs of Brochs, etc., excavated on his estate
of Keiss, Caithness, and in the neighbouring district, by Sir F. T. Barry,
viz.—Keiss Broch, 10 photographs: White Broch, 8; Road Broch, 19;
Nylster Broch, 8; Hill of Works, 2; Ness, 4; Everley, 4; Freswick
Sands, 6; Skirza, 4; Hillhead (Wick), 8; Elsay, 9; Norwall, 3;
Sgarbach Mound, 4; Freswick Chambered Cairn, 2; Shore Ruins, 3;
Castle-Linglas (?), 1.

(2) By ALEX. W. INGLIS, F.S.A. Scot.

Two-pronged Table Fork, the bone handle inlaid with a chequered pattern, in case.

Two two-pronged Table Forks, with carved handles of bone, in case.

Spur, with large rowel of five points, and ornamented steel buckles.

(3) By Misses MARGARET and ELIZABETH KINNENAR, Pitlessie, Fife,
through Mr WILLIAM STEVENSON.

Mr Stevenson supplies the following notes of the donation:—

Stone Implement, apparently a Pounding Stone, found upwards of fifty years ago on the lands of the late Mrs Don, Springfield House, Cupar, Fife, by the late Robert Kinnear, land-steward, and preserved by his family ever since.

Old Oil Candlestick Lamp, used by the family of the late Robert Kinnear for burning whale oil, until the introduction of mineral oil, upwards of forty years ago.

Two Brose Caps or wooden bowls which belonged to the late James Kinnear, son of the foregoing Robert Kinnear, and were used by him for about forty years. Half a century ago such wooden caps were universally used by the ploughmen in Fife, who owned the caps they made their own food in, and carried them with them from place to place.

(4) By JOHN BRUCE, F.S.A. Scot., Helensburgh.

Small Quaich of wood, ornamented with carved interlaced work, from Skye.

Polished Stone Axe, found in digging at Portkil, Kilcreggan.

Polished Stone Axe, from Montego Bay, Jamaica.

(5) By G. HAWKSLEY BEDFORD, F.S.A. Scot.

Iron Axe, with iron handle looped at the end, found in the ruins of Inverlochy Castle.

Octagonal Brooch of copper, with remains of inscription, found at Kilchrenan, Argyllshire.

(6) By the KEEPER OF THE RECORDS OF SCOTLAND.

The Accounts of the Lord High Treasurer of Scotland. Edited by Sir James Balfour Paul. Vol. v., A.D. 1515-1531.

The Exchequer Rolls of Scotland. Edited by George Powell McNeill. Vol. xxii.

Calendar of State Papers relating to Scotland and Mary Queen of Scots. Edited by William K. Boyd. Vol. iii., A.D. 1569-1571.

(7) By the MASTER OF THE ROLLS.

Calendar of Treasury Books and Papers, 1742-1745; Calendar of State Papers (Colonial Series), America and West Indies, 1693-1696; Calendar of Patent Rolls, Henry IV., 1399-1401; Letters and Papers (Foreign and Domestic) of the Reign of Henry VIII., vol. xix.; Calendar of State Papers (Ireland). Adventurers, 1642-1659; Calendar of State Papers (Domestic), 1693; Calendar of State Papers (Ireland), 1647-1660; Calendar of Papal Registers (Papal Letters), vol. v., 1396-1404.

(8) By the SECRETARY OF STATE FOR INDIA.

Archæological Survey of Western India—Architectural Antiquities of Northern Gujerat. Vol. ix. By James Burgess, C.I.E., LL.D., and Henry Cousens.

(9) By JOHN HUME, 18 Chapter Road, Willesden.

Copy (type-written) of Charter of hereditary Feu-ferm of the Lands of East and West Reston, in the barony of Coldingham, by the Prior and Chapter of Coldingham Priory, to George Auchincralb in liferent, and to John Auchincralb his son and heir-apparent and his heirs male in hereditary right, 2nd August 1536.

Copy (type-written) of Charter by King James VI. (after the Act of Annexation) of the same lands to George Auchincralb and Euphemia

Home his wife in liferent, and to Robert Auchincraib their son in fee,
11th March 1608.

(10) By JOHN C. GIBSON, the Author.

The Lands and Lairds of Dunipace. 8vo : Stirling, 1903.

(11) By GEORGE WATSON, the Author.

The Annals of Jedburgh Castle. 8vo ; Hawick, 1902.

(12) By LT.-COL. SANDEMAN of Fonthill, F.S.A. Scot.

Roman Hayling: A Contribution to the History of Roman Britain.
By Talfourd Ely. 8vo : London, 1904.

(13) By Major-Gen. Sir ALEX. B. TULLOCH, F.S.A. Scot., the
Author.

Recollections of Forty Years' Service. 8vo ; Edinburgh, 1903.

The following Communications were read :—

I.

REPORT ON THE STONE CIRCLES OF THE NORTH-EAST OF SCOTLAND
—THE BUCHAN DISTRICT—WITH MEASURED PLANS AND DRAW-
INGS, OBTAINED UNDER THE GUNNING FELLOWSHIP. BY FRED.
R. COLES, ASSISTANT KEEPER OF THE MUSEUM.

The report which I have to submit this year deals with the central and eastern parts of the Buchan district, upon the western borders of which our last year's survey was brought to a termination. The area is a very large one, but the sites still possessing megalithic remains are deplorably few—a result to a great extent due, doubtless, to the fact that the Buchan, with Maud as its centre of mart and commerce, is almost wholly agricultural, and so strenuously utilitarian in aspect and custom that it is scarcely matter for surprise, however much to be regretted, that Standing Stones, Cairns, and Stone Circles are alike regarded as cumberers of the ground, and more frequently than not, utterly demolished. To bring the matter to its sharpest issue, the distressing statement has to be made, that out of the twenty-five sites noticed below, there now remains but one complete Circle having its several stones erect and *in situ*. Some half-a-score others have several stones; but of these not a few are so much out of position as to suggest the probability that they were disturbed in the inefficient and vain search for relics. In a very few examples the interior appears to give evidence of being quite untouched. These would probably reward the competent excavator.

The Buchan, taken as a whole in the ancient sense, once possessed some forty-five Circles, as recorded¹ by the Rev. A. Chalmers. "Buchan, however, is now ordinarily regarded," says Rev. J. B. Pratt,²

¹ *Buchan Field Club Trans.*, vii.

² *Buchan*, edition 1901, with additions, p. 11. My references hereafter are to the same edition.

“as comprising sixteen parishes.” If we take Maud as the centre of a circle with a radius of about 12 miles, these parishes will be parcelled out thus:—In the N.E. quadrant are Pitsligo, Fraserburgh, Rathen, Lonmay, and Crimond, having three Cairns and six Stone Circles. In the S.E. quadrant, which contains the parishes of Strichen, St Fergus, Old Deer, Longside, Peterhead, Cruden, Slains, and Ellon, we find remains of nine Stone Circles and the sites of no fewer than thirty Cairns. The S.W. quadrant, comprising the greater part of the three parishes of Methlick, New Deer, and Monquhitter, up to which our last survey was carried, shows three Stone Circle sites and but one Cairn: while on the north quadrant, bordering with Banffshire, there are four Stone Circles and only two Cairns. Many smaller subdivisions of these areas are entirely devoid of Stone Circles; and, speaking generally, we may say that, as previously noticed,¹ small areas replete with Cairns are not marked by Standing Stones or Circles.

In compiling this report, our grateful acknowledgments are due to various observers who have already described several of the sites now under review; especially to Rev. J. Peter, formerly minister of the parish church in New Deer, to Rev. J. Forrest of Lonmay, and to several members of the Buchan Field Club, whose papers are printed in the *Transactions* of the Club, and also to Mr J. Milne, formerly of Mains of Atherb, without whose most frankly afforded knowledge, intimate and long-extended, of the antiquities of the Buchan, this report would be lacking some of its most valuable matter.

The plans are in most cases drawn to the same scale of 20 feet to 1 inch as heretofore; where any departure from this occurs, it will be noticed at its proper place.

Beginning near the most southerly limit of the district, the first site to be noticed is at the farm called—

No. 1. *Standing Stones of Hatton*.—The village of Hatton clusters about the Water of Cruden, 4 miles due west of Port Errol. At a point half a mile south of it there once stood a Circle of “seven or eight

¹ *Proceedings*, vol. xxxvii. p. 91.

stones, removed by the tenant in 1831 to make way for 'improvements.'¹ No further information was to be obtained from anyone acquainted with the locality.²

In correspondence with Mr H. B. Mitchell, of Peterhead, information reached me to the effect that on the river bank in the village of Ellon there are standing "some stones of the type usually found in circles with recumbent stone, arranged in a sort of circle"—evidently removed from their original site, which seems now to be beyond identification.

No. 2. Greenhill.—This is also in Cruden parish, 1 mile west of Longhaven station, on the Ellon and Boddam Railway. All that now remains of the Circle, the site of which is recorded on the O.M., is a fine pyramidal block of Peterhead granite, situated on a level portion of a field having on its east side a hillock of sand (see fig. 1). The Stone is deeply set in the earth, and its almost square base measures in girth 16 feet 8 inches, its top about 5 feet. Its most regular base-line trends E.N.E. and W.S.W., and it stands 4 feet 4 inches above the ground.

No. 3. Denheal.—This site, distant from the last slightly over a mile to the N.N.E., is close on the boundary between Cruden and Peterhead. What was the nature of the remains it is now impossible to state, since the O.M. merely records "site of supposed circles," and no further information is now to be had.

En route for relics of more substance, we may here note the map record of a group of antiquities that lies between the farms of North Aldie and Cairn Catto, partly in Cruden, in Peterhead, and in Longside

¹ *Bochar*, p. 42.

² In *The Scottish Journal*, vol. i. p. 371. it is recorded, with reference to this circle, that on the removal of the stones the earth about them was of a black, soft nature, differing much from that around it. On the next page it is further recorded, without specifying the exact spot, that in a cairn or mound there were found a cist containing parts of two skeletons, two clay urns, seven flint arrow-heads, two flint knives, and a polished stone about 4½ inches in length, neatly drilled through the four corners, and slightly concave on the one side and convex on the other [evidently a bracer]. Also, at about the year 1818, in a tumulus on Derryhall, Ardifferry, were found a chain of jet and amber beads and an axe-head of black flint. On the same land of Ardifferry, in 1821, there was found a cist containing a human skull, two urns, and seven flint arrow-heads.

parishes. Within a single square mile, the map shows the sites of seven cairns on the east bank of the Laecca Burn, the site of Silver Cairn, where an urn was found in 1818, a little farther to the north the site of a cairn and of an inscribed or sculptured stone,¹ found also in 1818, a spot called King's Grave, and described and figured² as a cairn-site with three cists exposed: next on Dun-na-Chaich, a long oblong

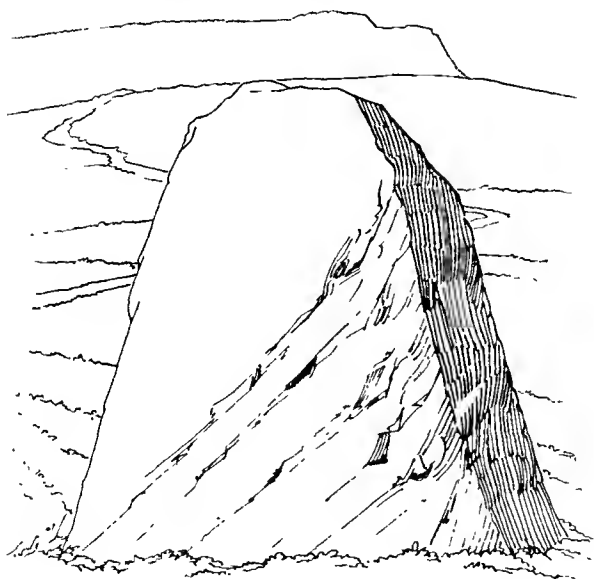


Fig. 1. Remains of Circle at Greenhill

mound named "supposed camp"—merely a sand-hillock: and below it a "cromlech"—merely a huge ice-stranded granite boulder,³ the site of a stone cist found in 1840 near Newton farm, two other stone cists found in 1864, and numerous tumuli: while close to the road running N.W. to Longside, the vast amorphous remains of Cairn Catto, once of

¹ Removed to the garden at Aldie: see *Buchan*, p. 104.

² In *Buchan*, p. 101.

³ Called by the tenant—curiously enough—*The Hanging Stone*.

great extent and height, now bare and jagged, its cists riven asunder and rifled of all contents, and its huge mass of boulders serving now more as a landmark than aught else.

Throughout this once so richly stored district, scarcely one object now remains tangible to the archæologist; but the great abundance of large nodules of flint half hidden among the heather formed a conspicuous feature: one, moreover, which holds equally true of the site next to be described.

No. 4. Skeinmuir Hill Standing Stones—On reaching this site from Cairn Catto, we pass the Moss of Savock, and cross into Old Deer parish at Smallburn. The Stones are on a fairly prominent hill-ridge, 6 miles due west of Cairn Catto. On the O.M. two stones are shown standing 200 yards apart, and in separate fields. But since making our investigations, we have ascertained¹ that many years ago there was a group of three stones, and that deserved ill-fortune befell the two farmers (whose lands were divided by the duke) for their wantonly removing them. These three stones stood in a triangle, and were probably the remains of a Circle.

On the more easterly of the two present sites there are now two Stones, a smallish one leaning up against a greater (see fig. 2, B); they rest on the eastward slope of the hill, near its summit. They are both of grey granite; the latter measures 4 feet 5 inches at the higher edge, 4 feet 2 at the lower, and girths at the base 7 feet 3 inches. It is set vertically. The smaller Stone is 3 feet 5 inches at its highest above the ground, and girths 5 feet 10 inches. The broadest side of the larger stone, 2 feet 5 inches in length, faces the north, and it is probable that the area enclosed by the other Stones lay in this direction.

The Standing Stone on the westerly site is a very rugged and 'out of plumb' monolith, also of granite, measuring about 5 feet 6 inches in greatest length and 7 feet in basal girth. In the illustration (fig. 2, A)

¹ Through the good offices of friends at Longside whose relatives formerly lived at Skeinmuir.

I show a view of this Stone from the south, with the Hill of Mormond several miles away in the distance.

No. 5. *West Crichtie*.—Site $1\frac{1}{2}$ miles N.W. from the last, and now unfortunately only a site. The circle of stones stood at a point midway between Turf-hill and West Crichtie, barely $1\frac{1}{2}$ miles south of Stuartfield.

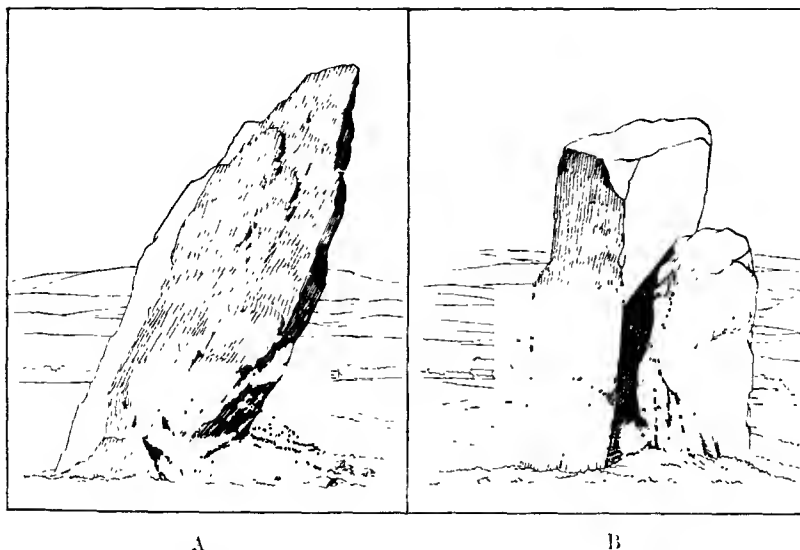


Fig. 2. Standing Stones of Skelmuu.

No. 6. *Upper Crichtie*.—One mile nearly due W. of the last, there is the site of a circle marked on the O.M.

No. 7. *King's Crown*.—Midway between the last site and Stuartfield is another, now featureless, site, given as the site of a circle on the map.

No. 8. *The White Cow of Crichtie*.—In the Buchan, this curious appellation is frequently given to great stones, presumably, as this one, of white quartz. We shall presently refer to the circle in the White

Cow Wood, near Pitfour : and there is on the coast, not far from Troup Head, a rock called The White Cow.

The block of pure white quartz now lying on edge on the grass-border of the avenue at Crichtie is probably only a fragment of the White Cow described by Pratt¹ as one of the old boundary-stones of the district, as its dimensions are 5 feet 6 inches by 3 feet 4 inches by 2 feet 7 inches. No such stone, be it ever so white, could have been of much practical use as a boundary-mark at the distances given by Pratt.

No. 9. The Muckle Stone of Auchmaliddie.—Such is the designation bestowed upon another and much greater block of brilliant white quartz by Pratt.² No notice whatever is taken of this stone on the O.M. ; and as the description by Pratt is not definite, I had almost given up hopes of finding it, when, on communication being opened with Mr John Milne, late of Mans of Atherb, and now residing at Maud, I was conducted to it by him on one of the many wet and misty days of September, and, in spite of all drawbacks, made examination enough of this site to put on record some interesting facts regarding it.

There are in reality two great Stones on this field at Auchmaliddie : and it was obvious, at a glance, that Mr Milne's long-handed-down tradition of the Circle that once marked the spot received confirmation from the relative positions of these two now prostrate megaliths, as the Recumbent Stone and the West Pillar (see ground-plan and profile view, fig. 3).

The site is a flat low field one mile and a third south of New Deer Church, and due west of the Upper Crichtie site, just noticed, 5 miles. For a radius of 6 miles from Auchmaliddie, in all directions except the N.E., there is not a relic to be classed as archaeological recorded on any of the maps.

This prostrate Recumbent Stone looks as shown in the profile view when seen from the east. Its dimensions are, greatest length 10 feet 5 inches, greatest breadth 5 feet 7 inches, greatest thickness 3 feet 4

¹ *Buchan*, p. 19.

² *Ibid.*, p. 188, where it is described as having been a rocking-stone.

inches. A goodly portion of it is of equal breadth, but the entire south edge is thin in comparison with the opposite one.¹ The longest face of the Stone points W. 60° N. (mag.), and thus it is probable that this fine block lies in almost exactly the line that its base originally occupied.

The other fallen block, which I assume to be the West Pillar,

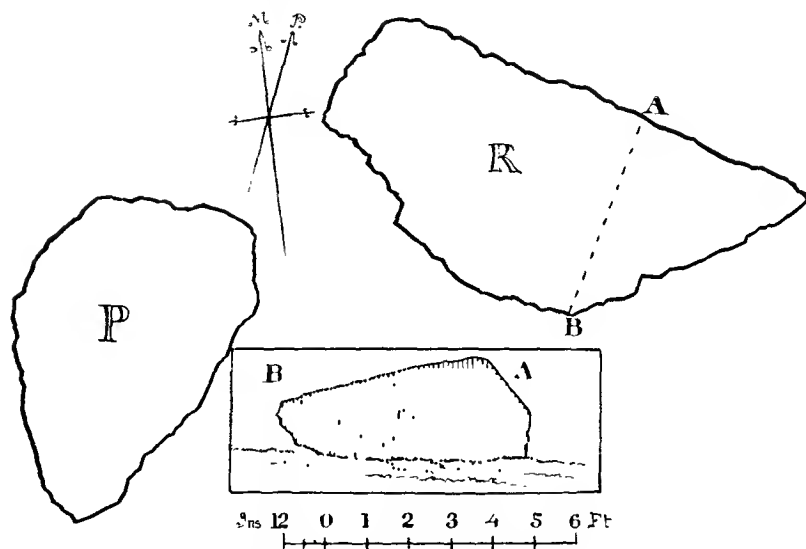


Fig. 3. Auchmaliddie; Plan and View from the East.

measures 7 feet 6 inches in extreme length, 4 feet 6 inches in breadth, and its western edge is 3 feet 2 inches above ground, its thinner portion varying from 20 to 24 inches. This Stone, like its companion, is of pure white quartz.² The dike hard by, on the south, is so full of fragments of the same species of stone as inevitably to suggest that the absent East Pillar—possibly even other Stones in the Circle—was of

¹ The computed weight of this stone is rather over eleven tons.

² For other instances of the use of this material see my reports in *Proceedings*, vols. xxxv. p. 231 and xxxvii. p. 97.

this conspicuous material. There is an extensive vein of the quartz about half a mile to the S.W. of this site, some of which may be seen in outcrops.

A few yards to the north, the very slightest swelling remains to faintly indicate the probable contour of the mound upon which the Stones anciently stood.

In a south-westerly direction over the dike, and about 20 yards away from the western edge of the Recumbent Stone, Mr Milne pointed out a very low circular mound, surrounded by a trench and low external ridge, measuring from crest to crest some 45 feet—extremely like a very ancient and, from its smoothness and regularity, an untouched cairn or sepulchral mound, of a variety not as yet classified.

No. 10. The Standing Stones of Culsh.—This site is 1 mile N.N.W. of New Deer. It has for long been only a site, but the memory of the circle is preserved in the name of the farm—Standing Stones. It is on record¹ that about the year 1770 the stones were removed for the purpose of building the parish church manse.

In the spring of 1901 the Society received news of the discovery of urns on a piece of ground presumed to be within, or close to, the area once enclosed by the stones. The site was visited by the Hon. J. Abercromby, who contributed² a full account of the discovery and a description of the objects found, which included a so-called ‘incense cup,’ a glass bead, and a small portion of a bronze blade.

No. 11. Standing Stone at Place Croft, Auld Maud.—On a little knoll, evidently on its surface artificially levelled, almost excluded from the observation of even a keen eye by the surrounding fields and the remnant of an old scantling of timber, there stands this one oddly-shaped and lowly monolith (see fig. 4). But although a humble specimen of Standing Stone, its archaeological record is a good one. As far back as any tradition goes, the stone has stood solitary; but close to it (at what precise distance I could not discover) there were found, about the year 1846, five or six small urns placed simply in the earth;

¹ *Buchan*, p. 186.

² *Proceedings*, vol. xxxv, p. 258.

with them some bones were also found, and seen by my informant, Mr Andrew Henry. All the urns and the bones were replaced.

The Auld Maud Standing Stone measures 3 feet 9 inches in height, 3 feet in width, and rather less than 1 foot in thickness. Its main axis points W. 63° N. The stone is of red granite.

At the back of the old cottage on this croft, roughly some 130 yards to the north of the Stone, there was discovered in 1898, in the course of digging, an urn, covered by a small slab and resting

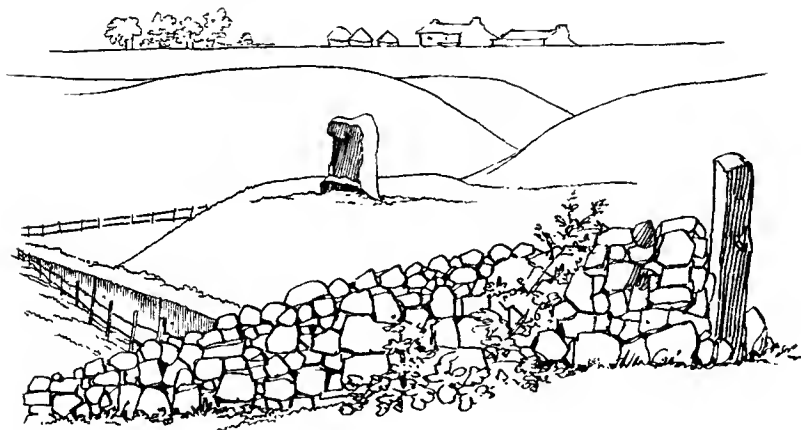


Fig. 4. Standing Stone at Auld Maud; View from the North.

upon another. The upper slab was lifted away by Mr J. Milne, who then proceeded to remove the stiff soil from round the urn: but although the greatest care was exercised, the pottery was so extremely brittle that it crumbled to fragments in his hands. It was half filled with burnt bones, and the estimated dimensions were, height 13 inches, diameter of the rim 9 inches, and of the base about 6 inches.

The discovery of the urns at the Standing Stone is recorded on the O.M.

No. 12. *Upper Benwells, Old Deer*.—Two miles and a quarter due east from the last there is shown on the O.M. the site of a stone circle.

Concerning it no information is now to be had: there is nothing on the ground, and it is only possible to assert that the demolition of the stones took place between sixty and seventy years ago. There are several sites of cairns on the same hill. The name is locally pronounced Bennes.

No. 13. Aikey Brae, Old Deer.—Situated exactly 1 mile N.E. of the last, on an isolated eminence of Parkhouse Hill, rather over 300 feet above sea-level, stand the goodly remains of this famous Circle, familiar as a household word throughout the Buchan, and the *rendezvous* of many an exploring or picnicking party. At the northern foot of the brae the Midsummer Fair is still held. Nor is this Circle unnoticed in the annals of the antiquary. The late Rev. James Peter, in an excellent but brief article,¹ has described and illustrated Aikey Brae, along with several other of the more conspicuous Circles in Old Deer and adjacent localities. The members of the Buchan Field Club, keenly alive to the need of discussing certain features of these Circles, have paid more than one visit to them, and put on record² both descriptions and plans: and this Circle in particular has been well photographed by Mr J. Park, of Old Deer.

The Circle on Aikey Brae, in its present state, consists of five erect Stones (inclusive of the Recumbent Stone) and five prostrate blocks, all of considerable magnitude and weight. The erect monoliths are carefully set upon a bank of small stones and earth, which displays the somewhat novel feature of being very sharply defined on both the inner and outer sides by many good-sized slab-like stones set upon edge. (See the ground-plan, fig. 5.) This bank measures from 5 to 6 feet in width, and from about 2 feet 4 inches to 2 feet 9 inches in vertical height above the enclosed area, which is pretty level and quite overgrown with grass. Below the mere surface-soil, however, the interior is evidently made up, in parts at any rate, of a mass of small boulders—an arrangement frequently observed in other circles.

¹ *Proc. Laps.* vol. xix. p. 377.

² *Trans. Luhan Field Club*, p. 29 of the volume for 1887.

It is difficult to be sure whether some disturbance may not have taken place: the position of an irregular hole (T on the plan), of the two small loose blocks near it, and of the large flat stone (S) lying 6 feet or so from the Recumbent Stone, certainly suggest tentative excavation. Some mutilation also has been done, for Stone F lies in at least two large measurable fragments.

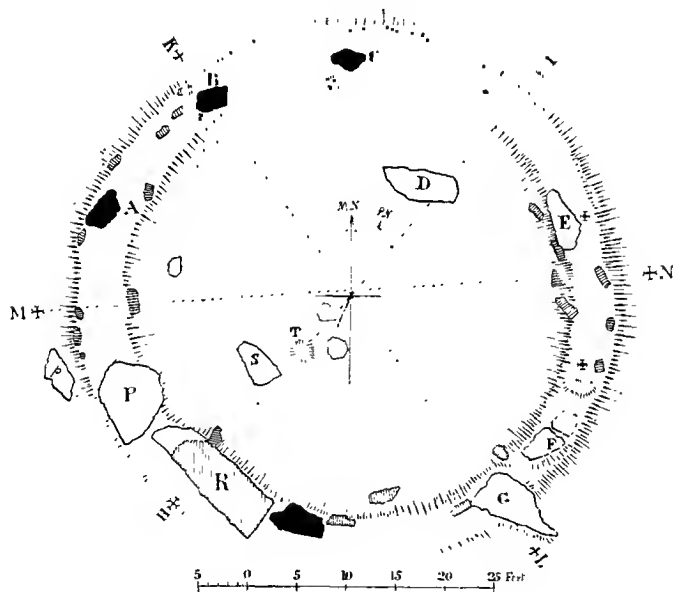


Fig. 5. Aiky Brae; Plan.

The distances between the Stones, taken as usual from centre to centre, are as follows:—

Stone A to Stone B,	16 feet
„ B „ „ C,	15 „
„ C „ „ E,	31 „
„ E „ „ F,	24 „
„ F „ „ G,	7 „ 4 inches
„ G „ East Pillar,	19 „ 3 „

East Pillar to West Pillar,	22 feet
West „ „ Stone A,	19 „

yielding a circumference of close upon 160 feet.

The dimensions of the stones are—

Stone A, 6 feet $7\frac{1}{2}$ inches outside height	} . . . granite
„ „ 5 „ 10 „ inside „	
„ B, 5 „ 10 „ both sides	„
„ C, 5 „ 0 „ „ „	„
„ D, 8 „ 0 „ long, 1 foot 5 inches thick	„
„ E, 7 „ 6 „ „ 3 feet broad, 2 feet thick	„
„ F, broken, 1 foot 9 inches thick	„
„ G, 8 feet 7 inches long (thickness not ascertainable)	

East Pillar, 7 feet high, granite, pointed; West Pillar, fallen, over 9 feet long, of whinstone. The smallest piece close on the west of the Stone appears to have been broken off this pillar. If so, then the Stone may have stood nearly 9 feet above the ground.

The Recumbent Stone, an irregularly oblong block of primitive trap, terminates in an abruptly vertical face next the East Pillar, but overhangs by a good space close to the West Pillar. It is remarkably uneven all over its upper surface. In extreme dimensions, it is 14 feet $5\frac{1}{2}$ inches in length, 5 feet 5 inches in breadth at the middle of its height, and 4 feet 4 inches across the top. At the east end it is 3 feet $10\frac{1}{2}$ inches above ground, at the middle of its length 4 feet 3 inches, rising to 5 feet near the west end, where it dips again to 3 feet 6 inches. Its weight has been computed to be about $21\frac{1}{2}$ tons. Its median line runs (mag.) N.W. and S.E.

In the accompanying sectional views (fig. 6) I have endeavoured to show the true relations between the heights of the Stones and the level of the area within.—the lowest section, M N, showing also the relative height and size of the slabs set up on each edge of the bank.

Two views (figs. 7 and 8) are also appended.

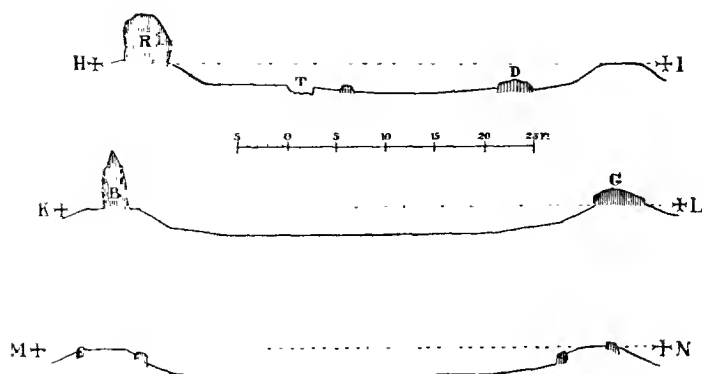


Fig. 6. Aikey Brae : Sections.

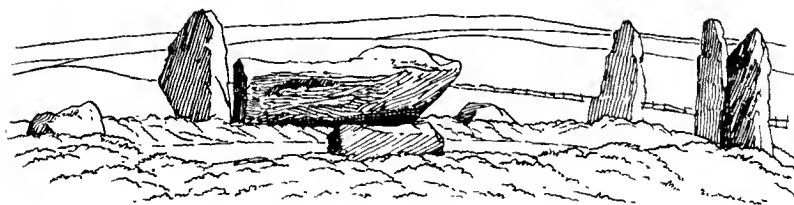


Fig. 7. Aikey Brae : View from the North.



Fig. 8. Aikey Brae ; View from outside on S.E.

In a recent publication¹ there occurs the following paragraph:—
 “The present editor was present during a long summer day, some years ago, along with the late Col. Forbes Leslie of Rothienorman, Charles Elphinstone Dalrymple, Esq., James Russel, Esq. of Aden, J. G. F. Russel, younger of Aden, and Thos. Ferguson, Esq. of Kimmundy, when the circle at Parkhouse was thoroughly and carefully examined for traces of sepulture. The central space was excavated to a depth of 6 or 8 feet without a trace of evidence that the soil had ever before been disturbed. Numerous small cairns, which looked like sepulchral monuments, and which surrounded the circle, were also thoroughly examined, and the day closed without any trace of graves.”

Now observe, a piece of ground containing considerably over 900 square feet was “excavated to a depth of 6 or 8 feet,” and “numerous cairns” hard by were also “thoroughly examined”—all this during one long summer day!

Had the men who plied pick and shovel spent a week over this excavation, and reported no “trace of graves” or other form of interment, the negative result might have been accepted.² As it stands, the account cannot, in reason, be taken to mean that every square foot of the soil enclosed by the Stones was dug into, even to the depth of a few inches; and unless every square foot is laid bare, the excavation cannot be held to be thoroughly exhaustive and scientifically complete. It does not by any means follow that, because “the central space,” whatever its dimensions were, yielded no traces of sepulture, some other portion of the enclosed area, *e.g.* close to the Recumbent Stone, or to the base of any of the other monoliths, might not have contained some such deposit.

No. 14. Lowen Wood, Pitfour.—This Circle is shown on the O.M. as having five Stones, and with no individuality in the plan of the Recum-

¹ *The Great North of Scotland Railway Guide*, p. 105, by W. Ferguson, Esq. of Kimmundy, ed. 1881.

² Even then the absence of relics at the date of excavation does not prove that interments were not ages ago made, and possibly removed subsequently.

bent Stone. In reality, there are still seven Stones, three of which are fallen.

The site is an extremely difficult one to find, and we received scarcely any help towards its discovery in the dense woodlands from anyone on the policies.

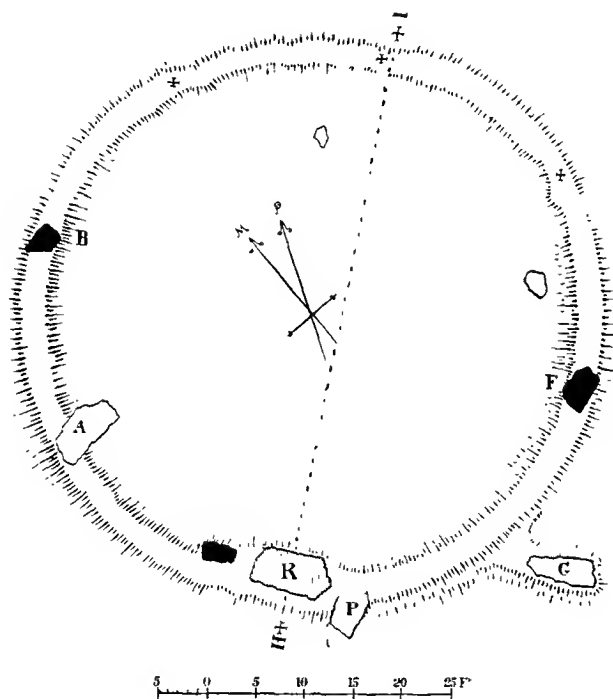


Fig. 9. Louden Wood: Plan

Louden¹ Wood Circle is of almost precisely the same character as that on Arkey Brae, the work of destruction having, of course, obliterated its minuter features, and a perennially abundant growth of blackberries aiding this effect by softening and rounding off all angles and sharpness of contour.

The Stones are set upon a bank (see ground-plan, fig. 9), the circum-

¹ Locally pronounced Lowden, the *ou* as in *hour*.

ference of which is 178 feet: its estimated height above the interior is about 2 feet 6 inches. The spaces from centre to centre between the Stones are—

Stone B to Stone A,	. . .	21 feet 2 inches
„ A „ West Pillar,	. . .	19 „ 0 „
West Pillar to East Pillar,	. . .	14 „ 6 „
East „ „ Stone G,	. . .	15 „ 6 „
Stone G to „ F,	. . .	17 „ 0 „



Fig. 10. Londen Wood: View from the S.E.

The heights and dimensions are—

Stone B, 5 feet 8 inches outside height, 4 feet 6 inches inside .
a very square block of granite.

Stone A (fallen), 7 feet 4 inches by 3 feet 9 inches.

West Pillar, 6 feet 5 inches; granite, pointed.

East „ (fallen), 8 feet by 3 feet 6 inches; granite.

Stone G, „ 7 feet 6 inches by 3 feet : „

„ F, 5 feet; high pointed, granite.

The Recumbent Stone almost touches the West Pillar, but is 12 inches apart from the East.

Its top slopes down towards the interior, and is very rugged and uneven. In extreme length it measures 10 feet 3 inches, in breadth near the middle 4 feet, and 2 feet 10 inches at the east end. It is of an average height of 4 feet. Its weight is about 12 tons; and its inner face is towards the E.N.E.—a slightly unusual position.

The view (fig. 10) is from the S.E.

No. 15. *Auchmachar*.—Before passing on to describe the remains of the Circle here, notice should be made of a remarkable mound of stones situated in a wood about a furlong to the west, at a height of 410 feet above sea-level. This is called Knapperty Hillock. Its dimensions are, length 216 feet, breadth of its flat summit 12 feet, with a downward slope on each side of about 15 feet, and a mean height of 7 feet. This whole mound seems to be composed of stones—smallish boulders and the like. Some of these are exposed at either extremity. Through information sup-

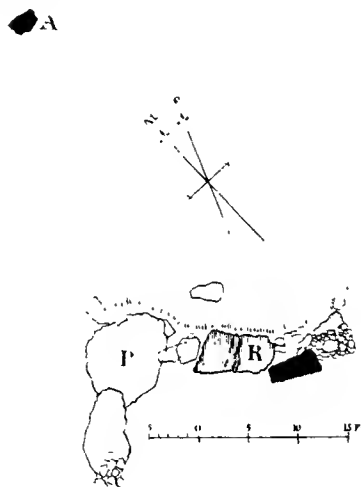


Fig. 11. Auchmachar: Plan.

plied by Mr John Milne, I am able to record that, up to 1850 or thereabouts, there stood a cairn at either end of this great oblong mound. These were both removed for the building of dikes, and though several urns and quantities of bones were discovered, none of them were preserved.

The Circle at Backhill of Auchmachar stood complete in its ring of nine great Stones up to the year 1850, at which date some of the tallest, over 11 feet high, were removed, to be used in repairing the mill. The poor remnant now left may be seen illustrated in the ground-plan (fig. 11) and the view (fig. 12). It consists of what once

was a massive Recumbent Stone of dolerite, shattered by some lads who had lighted a Midsummer Day fire on its broad surface: of the still erect East Pillar, the fallen West Pillar, upon which partly rests another great Stone, and one tall Stone of the original Circle yet *in situ* (A on the plan). Several smaller blocks lie about these in great disorder.

The diameter of the circle was under 50 feet.

The site is a field on the Backhill of Auchmachar, about 400 feet above sea-level, and a furlong from the steadings, on a fairly level space where two dikes meet.

Where so much recorded damage has occurred, it is hardly profitable to discuss present features: otherwise, I should direct attention to the position of the East Pillar—the only one now erect—which projects so



Fig. 12. Auchmachar: View from N.E.

considerably beyond the outer edge of the Recumbent Stone. Possibly the latter was originally very much broader. The height of this Pillar, of granite, is 8 feet 4 inches, and where the top of the dyke abuts against it the girth is 12 feet 7 inches.

The height of the recumbent stone is 3 feet 6 inches: to give its other dimensions would be superfluous. The one monolith, A, still left, to the N.W., stands nearly 7 feet 2 inches above ground, and is a vertical well set-up block of granite, squarish on two sides. (See the illustration, fig. 12, in which these Stones are drawn from measurements.) In the distance is an outline of Knapperty Hillock, with its cairns, as they probably looked in times past.

In the Arbutnott Museum, at Peterhead, there is a fragment of the upper part of an urn, labelled as 'found in 1840 beside the Stone

Circle at Backhill of Auchmachar." It is not of Bronze Age type of pottery, however. Probably the actual spot of its discovery was not noted at the time with sufficient accuracy.

No. 16. *White Cow Wood*—This site, which is almost as widely known as that on Aikey Brae, lies very nearly on the highest part of a very greatly-rising eminence 2 miles due south of the station at Strichen, and 1 mile north of the Auchmachar Circle, at the height of 466 feet above sea-level.

From descriptions and drawings already published,¹ an unusual interest and curiosity were aroused regarding this remarkable setting of stones: nor were these one whit lessened when, on approaching the site, we found the configuration to be as shown in the sketches (figs. 15 and 16).

Having in mind the severely rigid setting of outer and inner slabs connected with the bank in the Circle at Aikey Brae, it was perhaps a quite natural conclusion to form, that in this Circle at White Cow Wood we had a repetition of this arrangement. On further examination, however, no evidence was forthcoming that in this partial and low bank there had ever been an outer setting of such slabs on edge. And the surmise then flashed upon me, that probably these earth-fast slabs constituted truly the rim-stones of a cairn, and were never the limits of a bank upon which there once stood the great monoliths of a true Circle. In this guess, as I afterwards found, I proved correct.

As such an arrangement as this is, however, possibly unique among our recorded plans of cairns, it is surely advisable to give it a place here.

In the ground-plan (fig. 13), all the earth-fast Stones are shown in their exact relation to each other and to the interesting remains of the sepulchral chamber enclosed within them. They were all measured in a series of offsets from five chords drawn across the arcs of the circle.

The diameter of this nearly perfectly circular setting of Stones is 46 feet 8 inches measured from centre to centre of opposite Stones, forty-one of which are still *in situ*. On the S.W. is a gap, with a good-sized

¹ By the Rev. J. Peter, in *Proceedings*, vol. xix. p. 373. and in papers in *Trans. Bannockburn Club* 1887.

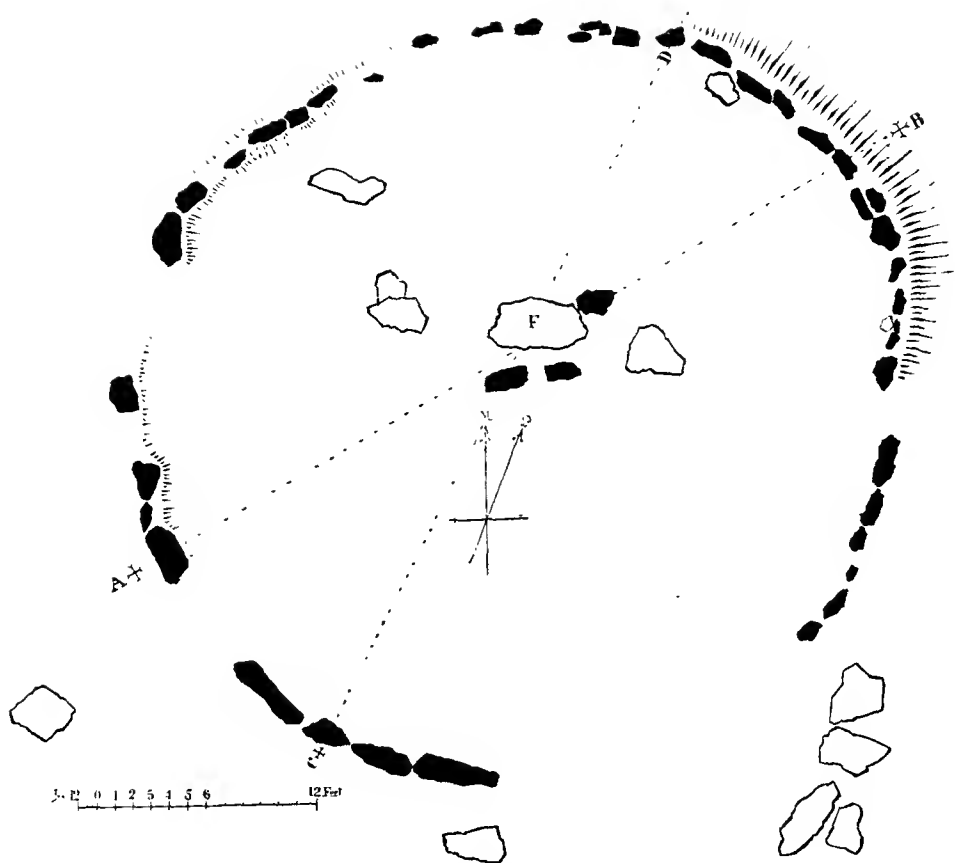


Fig. 13. White Cow Wood Cairn Circle ; Plan.

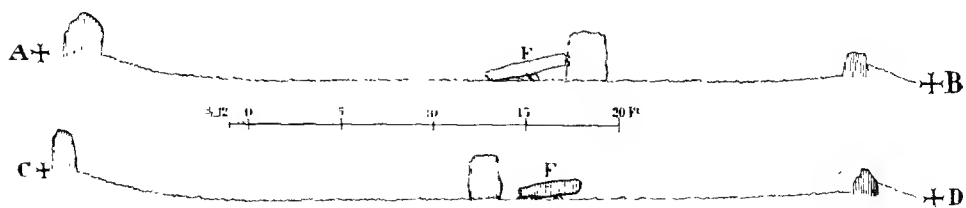


Fig. 14. White Cow Wood Cairn Circle : Sections.



Fig. 15. White Cow Wood Cairn Circle; View from the S.W.



Fig. 16. White Cow Wood Cairn Circle; View of remains of Sepulchral Chamber.

squarish Stone lying near it; on the W. another gap, which might be filled by two Stones; on the N. and the E. there is space for three others; and on the S.E. and S. there lie five great Stones, which, if placed side by side, would fill up the long gap there. Thus fifty-two or fifty-three Stones complete this environing portion of the structure. All the largest and highest are set on the S. arc.

Within the area, and somewhat N. of its centre, are three Stones standing erect (see view, fig. 15), and between them a large nearly flat block (F on the ground-plan, fig. 13, and sections, fig. 14); on the E. of these a large block, and on the W. two others lie. These seven are all that now remain of the sepulchral chamber once constructed here, and apparently containing the only interment within the cairn. Of the three upright Stones, that on the N.E. of the flat slab is 2 feet 6 inches above ground, and the other two are 2 feet 3 inches high. The sectional view on line A B going S.W. and N.E. shows the respective depths and heights of the structure. The sloping bank outside the low Stones at B is really due to the falling down of many of the smaller stones of which the cairn was composed, and not an integral portion of it. There is no such running over of small stones on the S. arc, where the four much larger and higher blocks have properly served the purpose of a retaining wall.

Mr Milne remembers this site when it was a cairn of about 10 feet in vertical height, and accounts for the wide gap on the S.E. by the removal of the five Stones there, so as to admit carts which carried away the enclosed boulders.

No. 17. Auchegorthie.—This site is not shown on the maps. For it I am indebted to Mr Milne, in whose grandfather's time the Circle was well known. It stood on the summit of a rather high field a quarter of a mile N. of the farm-house, and the Stones were all removed by the tenant, Hardie, about 1840. There was a Recumbent Stone, hollow on the top. The site is about 330 feet above the level of the sea.¹

¹ There stands, to the S.W. of the farm, a fairly massive stone, which we at first assumed to be the remnant of this circle. Two sides showed rather fresh fractures, and the tenant "rather thought that it had been set up some fifteen years ago."

In this name, Auchcorthie, we have yet another instance of its meaning and association with standing stones, as previously noticed in other reports.

No. 18. Strichen House.—This is given on the O.M. as a Circle of Stones standing among the beautifully-wooded policies of this estate.

As described by Rev. J. Peter,¹ it consisted of several Stones, with the Recumbent Stone set on the north arc. By another writer, the late Mr J. Spence, of Peterhead, this statement and observation are endorsed.² Afterwards, another member of the Buchan Field Club³ throws doubt upon the present position of the Stones, and refers to a rumour of their long ago having been removed, and then, by the orders of someone in authority, replaced, and misplaced in so doing.

On examining the site, it became quite clear to me that this rumour had its origin in fact: for not only is the Recumbent Stone group on the north arc, but all the Stones are placed several feet within the very compact and continuous earthen bank at this spot—two features utterly at variance with any of the arrangements hitherto observed in our surveys.

I am now in the position to be able to state the following facts on the authority of Mr Milne: that during the somewhat early years of last century his grandfather worked on the estate of Strichen: that about the year 1830—during Lord Lovat's proprietorship—the Stones of this circle were all removed, but that, before any further destruction took place, his Lordship ordered them to be replaced; and, according to old Mr Milne's recollection, they were not all replaced, and those that were, were set up not in their original positions.

The only means by which the facts regarding the original positions of the Stones can now be obtained is by a reference to an estate map of date prior to 1830–20. For aid in this direction I wrote in June 1903 to the factor, Mr Sleigh, who, by the 1st of February 1904, was able to reply to the effect that on neither of two estate plans, of dates 1796 and 1847, was there any trace of this Circle shown.

¹ *Proceedings*, vol. xix, p. 372.

² *Trans. Buchan F. Club* for 1887.

³ *Ibid.*

At the same date, 1st February 1904, I also received from the Rev. J. Forrest of Lonmay personal assurance that for many years it had been the current local tradition that these Stones had been removed, and were subsequently wrongly placed.

At present, therefore, it is obviously unnecessary to show a plan of the Circle at Strichen House.

No. 19. Gaval.—The Circle here “stood on a high sunny eminence looking eastward over the wide open country towards the sea. The Recumbent Stone was of enormous dimensions, and the destroyers

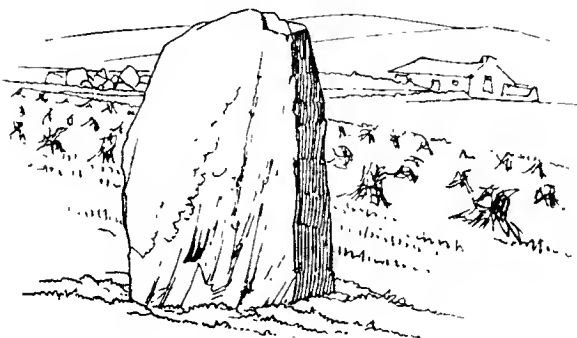


Fig. 18. Remains of Circle at Gaval.

shattered it with gunpowder.” Thus writes Rev. A. Chalmers in 1902.¹ The map record is merely a site, at a height of about 320 feet above sea-level.

Only one Stone now remains *in situ* (fig. 18), a fine, vertically set block of dolerite, girthing at the base 9 feet 6 inches, at the top 5 feet 1 inch, and clear above the ground 4 feet 10 inches. The N. edge is rounded, the others rather sharp, but all fairly vertical and smooth. As its broadest base-line lies due N. and S., I conjecture that the area of this Circle extended to the east of this Stone. Mr Milne remembers the Recumbent Stone and three others *in situ* up to about the year 1872, when they were destroyed by the tenants: destroyed, moreover, not to serve any

¹ *Trans. Buchan F. Club*, vol. vii.

useful purpose whatever, but split into easily movable fragments, and deposited at an angle between the main road and the loaming, where we counted over sixty pieces.

No. 20. The Gray Stone of Cortiecrum.—There is no record of this on the maps, but it is situated just 3 miles slightly to the S. of E. from the last, a quarter of a mile to the E. of the road between Mill of Hythie and Mains of Kinimonth, and about a furlong to the S.W. of Cortiecrum farm-house.

I have again to thank Mr Milne for this addition to my list for the past season.

This Gray Stone is a huge pillar-like mass of whinstone, but fallen half prostrate towards the south.¹ Around its middle it measures about 18 feet. Its present greatest height is 6 feet 8 inches, and its greatest length over 11 feet. By old residents it was always claimed as the last remaining Stone of a Circle.

No. 21. Auchnagorth.—In connection with the remains here, I experienced for once in this district how very misleading the record on the O.M. can occasionally be. On the 6-inch sheet, a very small and conventionally dotted ring and the ground-plan of only one stone had most naturally led me to expect a mere site marked by a monolith. How great was my surprise, therefore, when, on accosting Mr Jessiman, the tenant of Upper Auchnagorth, on the afternoon of my visit to this remote spot, I was at once informed that "all the ten stones were still yonder"! Hurrying up to the site, which is on a long level plateau, surrounded on three sides by deep natural trough-like hollows in the extensive peat-mosses, we truly found the ten Stones, seven of them, however, now for a long time prostrate. When all were erect, though none is conspicuously tall, this Circle must have been a very outstanding object for a great distance on all sides, since there are few knolls in the

¹ Its position is accounted for in local tradition by its having fallen upon and crushed to death an old-time farmer who was digging below it in search of a bull's hide full of gold. The same legend is told of two other monoliths in Aberdeenshire, one at Kildrumny and one at Bughill.

immediate vicinity overtopping the height of the plateau, which is 497 feet above sea-level.¹ What other greater enclosing hills there may be farther away it was quite impossible to tell, for the mist lay heavy over the entire landscape, frequently, indeed, so thickly enshrouding us as to render the path invisible at the distance of a few yards.

The Standing Stones of Anchnagorth are ten in number, and do not

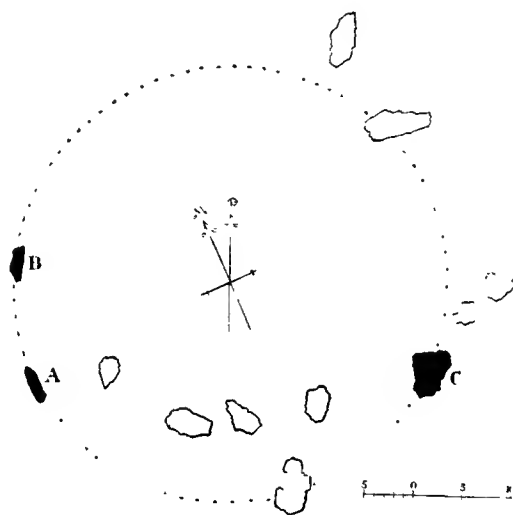


Fig. 19. Anchnagorth : Plan.

include a Recumbent Stone, or, from their relative positions, suggest the former existence of such. They appear to have been set (see the ground-plan, fig. 19) directly on the level of the ground, for what looks like a bank around the bases of the two stones on the west is really the modern turf-dike for carrying the posts of a farm fence. Of these ten Stones, however, only three are now erect—A, B, and C: three

¹ Between the Hill of Toclundie, 651 feet, near New Pitt-shigo on the east, and this Circle at Anchnagorth, there is a long strip of ground at the 500-feet contour, which goes by the strange name of Carny-whing.

others lie close to the circumference, and four smaller blocks lie considerably within it. All the Stones, so far as discoverable, are of a species of "rotten porphyry," rough, blueish in some parts, reddish in others, and coarsely veined with white quartz—evidently an easily disintegrated stone. All these features are most evident in Stone C, the most massive of the group (see fig. 20). It is prism-shaped, and across its westward face measures fully 5 feet. It is 4 feet 6 inches in height, and girths at the base 17 feet 5 inches. The Stone on the S.W. arc (A on the plan) is 5 feet 6 inches in height and 4 feet 4 inches broad:



Fig. 20. Auchnagorth : View from the South.

and the third Stone, B, is 5 feet 9 inches above the level of the field on the outside of the fence. It is over 3 feet 6 inches in breadth.

The true diameter of the circle is 44 feet 6 inches.

In view of so much displacement, we can scarcely hazard a guess at the exact positions occupied by the seven fallen Stones: yet, taking the space of 13 feet which separates the centres of Stones A and B as the probable average interval, we find there is just room enough for these seven fallen Stones. Further, it is to be noticed that the two longest of all the prostrate blocks lie close to the N. and the N.E. points, and the shorter ones to the south, an arrangement corroborating that observed in other circles of similar type, viz., that when the Circle has no Recumbent Stone, the tallest stones stand on the north arc, but in

those examples having a Recumbent Stone, the tallest Stones are invariably on the south.

There are two smallish stones near C : they are flush with the ground, and their thickness, therefore, is unascertainable, but from their position they suggest the probability of their being parts of one of the

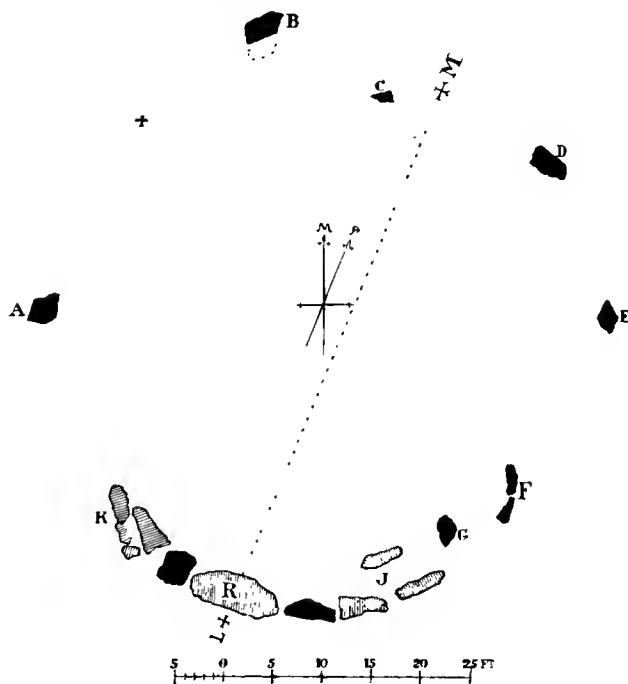


Fig. 21. Netherton of Logie in Crimond ; Plau.

formerly erect Stones. If so, we get rid of the difficulty of claiming the unusually small stone (near A on plan) as really one of the group.

No. 22. Netherton of Logie in Crimond.—This, the one specimen of a complete Stone Circle (fig. 21) to be noticed in this report, can best be reached from Loumay station, from which it is distant in a S.W.

direction two miles and a quarter. It is within four miles of the sea at Middleton of Rattray, and a bare hundred feet above sea-level. The site is a wooded roundel in a field close to the north of Netherton farm-house, and between it and the main road connecting Lonmay with Crimond. The fact of its being on Lord Carnegie's estate of Crimonmogate probably explains the fine state of preservation of this Circle, which also has the good fortune to be under the care of the present tenants, Mr and Mrs Keith, who have spent over forty years on the land, and who, like others in a similar position, welcomed our surveying party with true old-fashioned hospitality.

Unlike in many respects to the Auchnagorth Circle, so many miles distant on the west, this Netherton Circle bears a resemblance to that in having its Stones set apparently on the natural level of the ground, without any surrounding bank of earth. I make this statement with some diffidence, because, although the interior displays no signs either of having been ploughed or roughly explored by digging anywhere, it is, of course, possible that such operations were conducted at a date so remote that nature by this time has so laid her softening hand upon man's interference as to obliterate all signs of it (see view from the north, fig. 23).

The spaces between the stones are as follows :—

Stone A to original site of Stone B	21 feet 6 inches
„ B „ Stone C	24 „ 8 „
„ C „ „ D	18 „ 2 „
„ D „ „ E	16 „ 9 „
„ E „ „ F	20 „ 6 „
„ F „ „ G	7 „ 10 „
„ G „ East Pillar	16 „ 0 „
East Pillar to West	14 „ 9 „
West „ to Stone A	29 „ 6 „

from which we have a circumference of almost 170 feet. The diameter, as measured between Stones A and E, is exactly 57 feet.

The heights and characteristics of the stones are—

Stone A,	5 feet 5 inches,	vertical, broad :	red granite.
.. B,	4 .. 0 ..	much out of plumb :	red granite.
.. C,	4 .. 0 ..	sharp-edged,	..
.. D,	3 .. 7 ..	bulky, flat :	grey granite.
.. E,	4 .. 5 ..	pointed :	whinstone.
.. F,	5 .. 10 ..	sharp-edged :	red granite (one stone).
.. G,	3 .. 6 ..	pointed :	whinstone.
East Pillar,	6 feet,	flat-topped :	red granite.
West ..	6 ..	pointed,	..

The Recumbent Stone, of grey granite, measures in full length 9 feet 9 inches, in height 4 feet 2 inches, and is perfectly rounded throughout its contour, not having an angular or level space on it. In girth it measures transversely 11 feet, from the level of its base on both sides. Its weight may be put at 8 tons and a quarter.

Even in this Circle some shifting of the Stones must at some long-past period have taken place : it is obvious that Stone B is considerably out of its proper position, and that F and G are too near each other.

In addition, we must observe the three massive and apparently earth-fast blocks at J and the four at K. The positions occupied by the first group of three certainly suggest their being a portion of the original structure. They should be compared with the similarly-placed blocks in the Circles at Hatton of Ardoyne¹ and at New Craig, Daviot². They average 5 feet in length and 1 foot 8 inches in thickness, and the relative positions of the J group suggest the boundary-stones of a bank of earth such as we find in other Circles belonging to the Buchan and elsewhere.

With regard to the feature noticed when describing the Auchnagorth Circle,³ the presence of the smallest and shortest Stones at points N. and N.E. of the Recumbent Stone is well accentuated in this Netherton Circle. I append two profile views (fig. 22), the upper one on line LM

¹ *Proceedings*, vol. xxxv. pp. 242, 244.

² *Ibid.*, vol. xxxvi. p. 523.

³ *Ibid. supra*, p. 254.

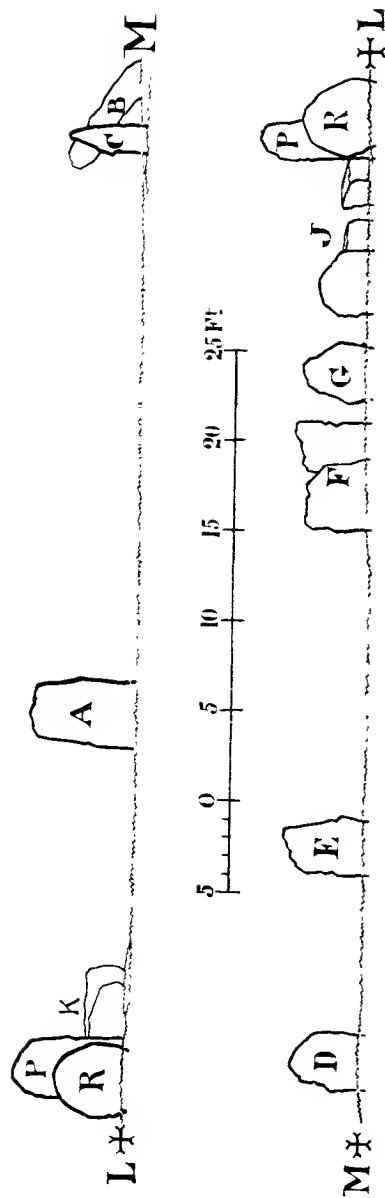


Fig. 22. Northerton of Logie in Chimond; Sections.

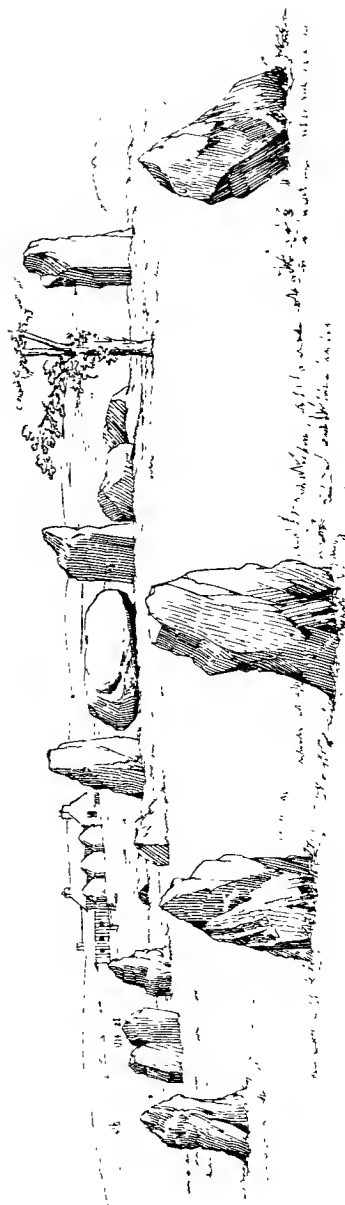


Fig. 23. Northerton of Logie in Chimond. View from the North.

from south to north, the lower from north to south on the same line; and in the view from the north (fig. 23), the Stones are shown disencumbered of the trees planted about them.

No. 23. *Berrybrow, Lomnay*.—This Circle is due west of the last-mentioned exactly 1 mile, and from Lomnay station, by Lumbs, about a mile and three-quarters to the S.E. A roundel of trees and a low dike mark off the spot; but the dike is quite unprotective against the inroads of cattle, many of the trees are fallen across the central enclosed area, and only five of the Stones now remain.¹ These comprise a Recumbent Stone and two very massive Stones still *in situ*, and two prostrate and broken. The interior space is level, and seemingly undisturbed, and lies fully 2 feet 3 inches below the surrounding bank on which the stones are set, the bank being quite complete throughout, and fairly measurable at any point. One characteristic of this Circle appeals forcibly to the eye as one walks round it on the outside of the bank: this is, that the ground within the Circle bank is on a higher level than the natural surface on its exterior. In other words, the vertical height of the bank, though only 27 inches measured to the interior, is 45 inches measured on the outside.

The Recumbent Stone, a roughly prism-shaped and long mass of whinstone, trends in the direction of W. 40° N. (mag.). It is 10 feet 10 inches in extreme length, a large portion of it being sharply gable-shaped, and otherwise full of irregularities. Both its outer and inner sides are nearly vertical, and its basal width is 3 feet 8 inches. In height above the ground at its base it stands 4 feet 4 inches. Its eastern extremity is the narrowest, measuring there only 2 feet 2 inches, but at the west fully 3 feet. At each end it falls short of touching the pillars by several inches. Its weight is over 9 tons.

The East Pillar lies broken in two (see ground-plan, fig. 24). This, at least, is the only reasonable purpose to assign to the two great fragments of red granite that are embedded near to its proper site. The West Pillar is a grand monolith, being an oblong block of red granite,

¹ In *Bechna*, this circle is mentioned as 'a very perfect circle, near Lumbs.'

5 feet broad by 2 feet 6 inches thick, and standing clear of the ground over 7 feet.

The first Stone of the Circle (A on the plan) is also a very massive and striking one. It has a rhomboidal base which girths 12 feet 2 inches, and its outside height is 5 feet 2 inches : on its inner side, where its base touches the bank, the height is 3 feet 7 inches. The second Stone, B,

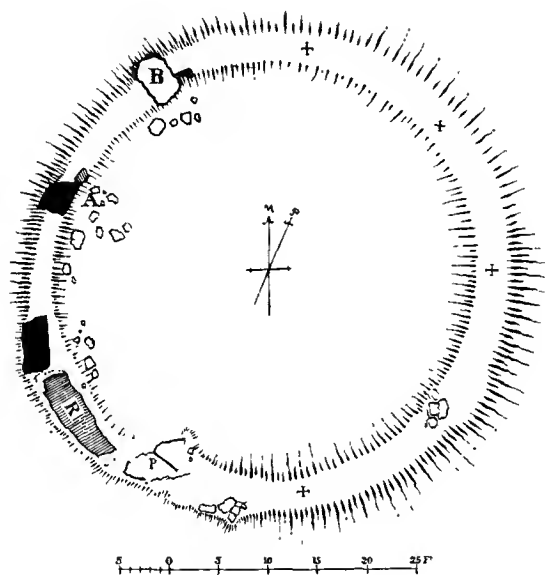


Fig. 24. Berrybrae. Lonmay; Plan.

is now prostrate. It is a broad mass of, I think, whinstone, measuring 5 feet by 3 feet by 1 foot 6 inches. Close to its upper and inner edge is a set slab, and several others of similar shape and size lie about near it, and also near Stone A, and between that and the West Pillar, suggestive of the former existence of an inner setting of stones limiting the bank.

The spaces between these three Stones are almost exactly equal—

15 feet ; and on this proportion we find room for five more Stones, thus completing a circle of ten Stones.

The diameter is 45 feet. In the view from the N.E. (fig. 25), the massive grandeur of the three remaining erect Stones is shown, and causes the greater regret at the loss of the others, which contributed, even so lately as the date of Pratt's description, towards the distinction and completeness of this Circle. The Hill of Mormond is seen in the distance.

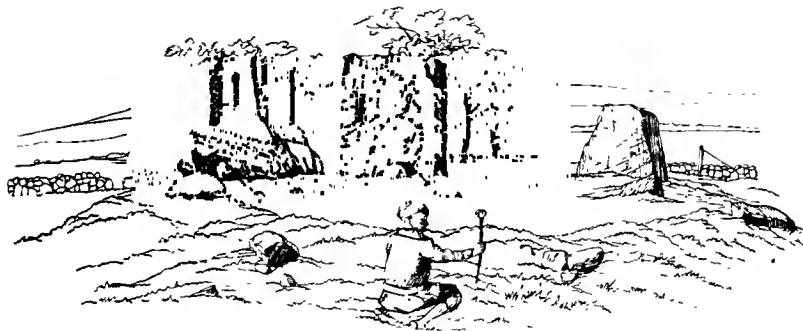


Fig. 25. Benybarrow, Lomnay. View from the N.E.

No. 24. *Cortie Bar, Lomnay*.—At this place the O.M. records the site of a Circle on the crown of the rising ground, half a mile N.W. of the station at Lomnay. The site is now marked by two Stones only, one of which (A on the ground-plan, fig. 26) stands 2 feet 10 inches above ground—a rather bulky grey granite boulder. The other is flush with the ground, and measures 4 feet 5 inches by 3 feet. Both Stones rest on a roughly semi-circular mound (indicated by the dotted line in plan), which is confined by a dike, and is about 3 feet high. This possibly is part of the ancient mound upon which the Stones were originally set. More probably, however, all the Stones were lifted and huddled together at this spot, which is now distinguished by a flagstaff. We could derive no information from anyone we met here.

The longer axis of the still erect Stone A trends nearly N.E. and S.W., and measures 5 feet.

This site marks the most northerly Stone Circle site now extant in Aberdeenshire.

No. 25. The Gray Stone of Clochforbie.—The Circle once crowning this comparatively lofty and conspicuous height, 420 feet above sea-level, is almost as far to the north as the site last noticed. It is several miles to the west, and in the parish of Kinedart.¹ It is quite likely that the Standing Stones of Auchnagorth were visible from Clochforbie, as the two sites are only a couple of miles apart; but, for reasons above given, I could not be sure of this.

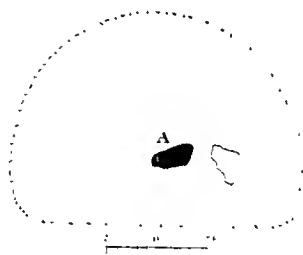


Fig. 26. Remains of Circle at Cortie Bre

The site is at a point 4 miles due south of Gardenstown in Gamrie Bay. The road between Clochforbie and the Crofts of Clochforbie passes within a few feet of this Gray Stone, and its construction must have caused the demolition of the Circle: for this one remaining is doubtless, by its horizontal position, its bearing by compass, and its ponderous proportions, the Recumbent Stone of the old times. It is a rough, rounded, rather boat-shaped boulder of whinstone (see figs. 27, 28), irregular on all sides, but fairly flat on the top; and though almost 12 feet in over-all length, and 2 feet 10 inches broad near the middle, it is in contact with the ground for only some 5 feet, thus having a very

¹ It is well pointed out by the author of *Burhan* that the older spellings of this name Kynedol, Kumber, Kemeder, and Kynedart, etc., prove that it is Gaelic in origin, and has no connection with any King Edward.

considerable overhang at each extremity. Its greatest height is 3 feet 3 inches, and it rests upon several small stones. Its main axis lies N.W. and S.E. (mag.), and its weight is 4 tons and a quarter.

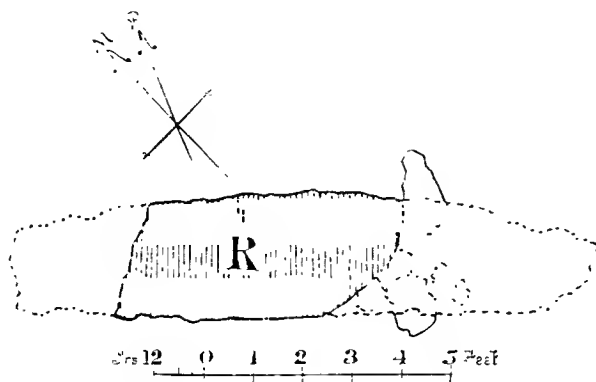


Fig. 27. The Grey Stone of Clochforbie ; Plan.



Fig. 28. The Grey Stone of Clochforbie ; View from the North.

Not the slightest vestige of any other Stones or of a circular area likely to have been that of the Circle is now to be seen, and I came in touch with no one whose memory could recall any different conditions.

This site at Clochforbie is distant west from Berrybrae $14\frac{1}{2}$ miles, and for nearly 8 miles farther west, close to the town of Banff, there is

no indication on the maps of any circle or cairn extant. In other words, in a district comprising 156 square miles, we have now only five sites recognisable as sites of Stone Circles.

Conclusion.—Out of the diversified megalithic remains thus reported on, there are eight localities which are, and have been for long, mere sites; three others, Greenhill, Auld Maud, and Cortiecrum, are each marked by a single Stone; at three other sites, Skelmuir Hill, Cortie Brae, and Auchmagorth, there are remains of Circles; and at the following sites we have either the personal testimony of old residents for the existence of a Circle with Recumbent Stone, or Recumbent Stones themselves, viz., at Auchmaliddie, Aikey Brae, Loudenwood, Auchmachar, Strichen House, Gaval, Netherton in Crimond, Berrybrae, Clochforbie, and Auchcorthie.

A period of five years having now elapsed since I received the commission from the Society to undertake the Survey of the Stone Circles of the North-East of Scotland, it seems an appropriate moment at which to place on record a few generalisations deduced from our investigations.

We can, for instance, now answer some of the questions propounded at the close of my first report. We can, with the map before us, point to no fewer than one hundred and fifty-five sites at which there either still remains a Standing Stone or a Circle of Stones, or at any rate the symbol used by the Ordnance Surveyors to indicate that such remains did formerly exist at these sites.

Taking into account the solitary Recumbent Stone of the Circle once existent at Millplough, near Bervie (which did not come within the scope of this special survey, but which I have seen and illustrated¹), we can even state with precision that this remarkable megalithic feature, unknown in any other part of the world, so far as records are trustworthy, distinguishes the Circles of Kincardine-shire, Aberdeenshire, and Banffshire (so far as yet examined), from Bervie in the south to

¹ In *Proceedings*, vol. xxxvii. p. 197.

within a half dozen miles of Gamrie Bay in the north, and extends right across from the coast at Slains and at the mouth of the Dee to the high hilly districts in Alford, and up to the Deveron beyond Huntly. And we have ascertained the proportion between the Circles devoid of the Recumbent Stone and those possessing it to be this, that out of one hundred and twelve measurable Circles, sixty-one are proved to have had Recumbent Stones,¹ a large number of these being still *in situ*.

Regarding the important feature of the discovery of sepulchral relics within the Circles, there is indisputable evidence that in over thirty examples in which competent and thorough excavation was made, interments of various kinds have been brought to light—a number surely sufficiently large to constitute a type, and to set at rest the idle speculations, even yet so frequently indulged in by fanciful persons, as to these ancient burial-sites being vaguely associated with a class of men who in England worshipped in groves of oak, and held the primitive community in terror by some indescribable necromancy and magic.

It is only right to add, that there are yet several sites so remote from the places of our sojourn in the different districts of Aberdeenshire (some of them also not known to me at the date of our visits) that they were necessarily passed over. These are described on the O.M. thus:—Remains of Circle at Corshalloch, in Glass; Lulach's Stone, a Kildrumny; sites of two supposed Circles on Clachennihill, Tarland; and in the same parish a Standing Stone at Middle Simmahard, and the remains of a Circle called Tom-na-veerie: the remains of a Circle, one stone; a Standing Stone at Boltinstone in Logie Coldstone; and in the same parish, remains of a Circle at Wester Brachead, St Wulock's Stone, the sites or remains of four other Circles, and the remains of another at Waulkinhill (definitely recorded); the remains of a Circle, two stones, on the farm of Standing Stones in Skene, and at Auchincleach; a Standing Stone at South Auchronie in Kinellar: the Warlock Stone on

¹ In this numeration, I include only one Recumbent Stone site unvisited by myself. It was called by the strange name of Gingongres, and was at Milleath in Cairnie. See *Place Names of Strathbogie*, by the late Jas. Macdonald.

Craiglash in Kincardine O'Neill, and a Standing Stone in Glenmuick, near Ballater. These would, if the map-records were all proved correct, bring up the total number of sites to one hundred and seventy-five.

A few sites in very out-of-the-way localities in Banffshire, contiguous with Aberdeenshire, have also been unvisited, *e.g.*, in Marnoch and in Boyndie.

But in studying the larger Stone Circles of this extensive north-eastern district of Scotland, with the yearly increasing opportunities for adding to our knowledge of them, one feature has emerged, which, because of its structural interest and importance, calls for a somewhat detailed and careful notice. It first suggested itself to me after planning the great Circle at Auchquhorthies¹ on Kinecasie Estate, near to and S.W. of Aberdeen, again in the circle at Tom-na-gorn,² and latterly in others.

The measurable Circles, out of the grand total on record, number only seventy-seven. We may divide these into three groups, according to their size: thus, (1) of Circles whose diameter is 60 feet and more there are forty examples; (2) Circles of the second magnitude, with diameters of from 30 feet to 60 feet, are twenty-eight in number; (3) the small Circles number nine examples.

It is with the larger Circles that the following inferences have to be made.

Taking the ground-plan of the great Circle at Auchquhorthies (fig. 29), in Kinecasie, as starting-point, and measuring with compasses to ascertain the common centre of the three Stones (A B C), we find that the circumference thus obtained runs many feet outside of the Recumbent Stone group. That group of three great Stones is on the circumference of a considerably smaller circle, concentric with the inner stone setting of low slabs placed on edge.

The same observation applies to the circles at Garrol Wood, at Esslie, at Saulhoney, at Dyce, at Tom-na-gorn, at Kirkton of Bourtie, probably also in two or three other examples in the lower districts not now dis-

¹ *Proceedings*, xxxiv, p. 145.

² *Ibid.*, p. 174.

playing sufficient data for exact measurements; and certainly at Yonder Bognie and at Rothiemay (surveyed in 1902).

The structural point specially urged may be stated in a different manner; it means that the stones respectively to the west and to the east of the two pillars do not—in the nine examples adduced—stand

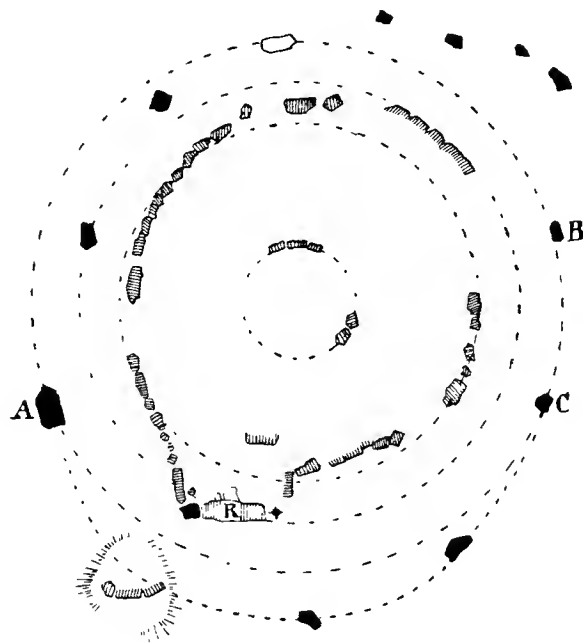


Fig. 29. Auchquhorthies, Kincansie.

with their longer axis 'in line' with the pillars, but always 'in line' with two stones, which (if not demolished) would complete the external circumference of the circle, and which *are* present in part in the Auchquhorthies Circle, which therefore gives us a key to the constructive principle governing the circles of the first magnitude.

Now, if—as the plans and drawings show—there are several circles having the Recumbent Stone group definitely connected with the inner

stone setting by a series of long slabs, we have, in truth, looking at the structure as a whole, a double circle of stones, and we also have an arrangement that answers to the earliest descriptions of Stone Circle with an accuracy much greater than is generally supposed.

For, at a date long previous to the modern era of close agriculture, what caught the eye of the wandering antiquary was a ring of great pillar-stones, and within it, that one peculiarly placed stone—the Recumbent Stone—which it pleased our forefathers to call the altar. This great massive Stone, reclining east and west, roughly speaking, and far greater in bulk, ordinarily, than any of the Standing Stones, must necessarily have attracted immediate notice, because, the interior of the Circle being grassy all over, scarcely anything of the inner setting would be visible. The Recumbent Stone and its two pillars thus formed an isolated group, well within the earthen bank on which stood the boundary-stones of the Circle. Nor would it be until after a good deal of attempted excavation had occurred that the true structural connection between the Recumbent Stone and the inner setting was even partially revealed. Therefore, with a great ring of Stones guarding, as it were, the semi-prostrate one within, it is hardly matter for surprise that the earlier observers, content to examine superficially, filled their imaginations with scenes of sacrifice and of so-called Druidical ceremonial.

From some of these early notices I shall now proceed to quote.

(a) Probably the first careful description of a Stone Circle in Scotland is that penned by Gordon of Straloch¹ in the following words: “visuntur septa ingentium saxorum, in orbem disposita; unum, intra orbem, latitudine prae ceteris conspicuum, austro obversum, arae locum praebuisse videtur: saxa haec, difficili vectura, saepe a longinquo petita.”

The map accompanying the description is dated 1654.

This is as terse a description as could be of a great Recumbent Stone situated, like an altar, well within the area of the orb of the circle.

(b) In 1692 the Rev. Dr James Garden, Professor of Theology at Aberdeen, in writing about Stone Circles to John Aubrey in London

¹ *New Description of Aberdeen and Banff* (Spalding Club), p. 8.

says: "Two of the largest and most remarkable of these monuments that ever I saw are yet to be seen at a place called Auchincorthie, in the shire of Mernis, and five miles distant from Aberdeen, one of which has two circles of stones, whereof the exterior consists of thirteen great stones" [In my plan of this great circle at Kincausie the number of stones in the outer ring is thirteen.] "The other monument," proceeds Dr Garden, "which is full as large, if not larger, than that which I have already described, and distant from it about a bow-shot of ground, consists of three circles, having the same common center."

This is the Circle at Old Bourtree Bush, the remains of which we planned in our first survey, but of which neither of the two inner concentric settings remains. It is clear, however, that Dr Garden recognised two varieties of Stone Circle here.¹ In the beautifully clear plan² of this same Auchincorthies Circle made by James Logan, the feature of the double circle of stones is well brought out, the Recumbent Stone group standing some 25 feet within the outer ring of great Stones.

(c) To quote but one instance out of several in the *Old and New Statistical Accounts*, the Rev. Robert Cook, M.A., minister of Clatt, in 1842 writes of "the distinct remains of a Druidical temple, of which only the supposed altar-stone and a few of the upright stones remain. The stone supposed to have formed the sacrificial altar, *in the centre* [italics mine], was of large dimensions," and so forth.

(d) Lastly, we cite Rev. James Pratt, who was a keen observer, and did so much towards the recording, by description at least, of the sites of the Circles, and in arousing the tenants to set some value on them as the most ancient memorials of the past left in the Buchan. In the course of some general remarks on the circles in *Old Deer*³ this author says, "Sometimes inside the circle—sometimes in the circumference of

¹ Dr Garden is also particular to note, with regard to the circles, "I have found nothing hitherto, either in the name of these monuments or the tradition that goes about them, which doth particularly relate to the Druids, or point them out." *Archæologia*, i. p. 341.

² *Ibid.*, vol. xxii. p. 202.

³ *Buchan*, pp. 164, 165.

the circle itself—there is one conspicuously large stone, lying flat, which is frequently designated the altar-stone.”

When describing Aikey Brae Circle he uses these remarkable words: “The diameter of the space enclosed by the inner circle is about 50 feet.” This description implies that the present ring of fallen and standing Stones was once surrounded by another. Whether this was precisely concentric with the Stones as they now remain, or, as at Auchquhorthies, the outer circle tended towards a horseshoe contour, does not affect the point I am attempting to elucidate, which is, that in a large number of the greater Circles possessing a Recumbent Stone, that Stone and its pillars¹ were set a considerable distance within the area defined by the erect monoliths.

Reference should also be made to another special feature, about which perplexity frequently arose when conducting our examination on the spot, but which is now, I think, satisfactorily explained.

In the report of surveys made in 1901 I made use of a diagrammatic ground-plan of what formerly must have been a remarkably well-preserved specimen of Circle with Recumbent Stone at the Hill of Fiddes in Foveran. This plan, drawn by Jas. Anderson in 1777,² is held by him to be a fair typical example of the Aberdeenshire Circles; and it contains a clear outline of the oblong-oval platform of small stones, projecting inward for a few feet from the inner face of the Recumbent Stone, and extending to the east and west of it for about the same distance.

In none of the Circles examined during these surveys does this definite detail of arrangement now exist, with any clearness or continuity of line. But, quite recently, having access to a number of letters written by Mr C. E. Dalrymple in 1855-56 to Dr John Stuart, letters which in many cases were accompanied by sketch-plans of the Circles he was at that time busily engaged in excavating, I observed, in the drawing of the Circle examined at

¹ By the older observers frequently styled “the horns of the altar.”

² *Archæologia*, vol. v. p. 246.

Castle Fraser,¹ this very platform-like structure, elaborated with an attention to detail that is valuable as evidence in a matter where so little evidence is obtainable.

The drawing is here reproduced² (fig. 30). Mr Dalrymple says

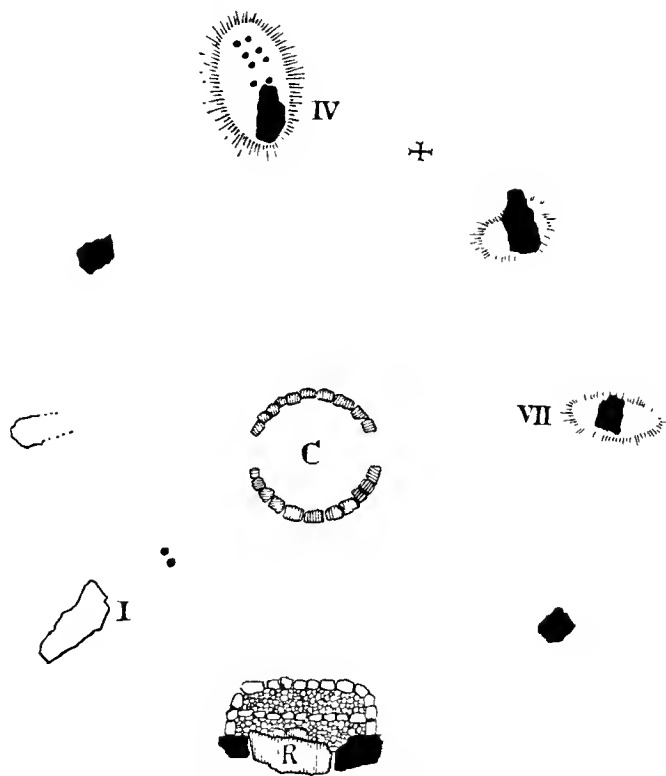


Fig. 30. Balgorkar, Castle Fraser.

of this circle:—"The diameter is from 63 to 66 feet, being irregular in shape. There is a small concentric circle, 13 feet in diameter, within

¹ Balgorkar, in the report, *Proceedings*, xxxv. p. 201.

² In this plan I have utilised my own ground-plans of the stones, and added the other important details from the Dalrymple sketch-plan.

the larger one, but only defined at the north and south sides by stones sunk down to the subsoil, and showing themselves only a few inches above ground. They touch each other, and show generally a flat side towards the centre of the circle.

"Heaped up against the [Recumbent] Stone and the upright pillars at either side of it was a low tumulus, about $2\frac{1}{2}$ feet in height, which was found to consist of earth heaped over a rude pavement of small boulders, enclosed and intersected by lines of larger ones placed as shown in the ground-plan. Just above this pavement, and up against the [Recumbent] Stone, was a deposit of the usual black mould, covered by a small flat stone placed horizontally, similar to those which are so often found laid above and below these deposits, but of which this was the only decided example found in the circle. Below this rude pavement was a considerable quantity of very black mould, evidently largely composed of charcoal, both powdered down and in small pieces, and extending down to the subsoil.

"At Stone [IV.]¹ was another low tumulus of earth over a layer of small boulders, and containing beneath the latter no less than eight different deposits of the black mould and charcoal, seven of them having fragments of urns mixed with them. A curious feature of this tumulus is, that the Stone No. [IV.] lies embedded in it, only showing its surface or little more above ground, and having every appearance of having always formed part of it, as from the thickness of the stone its lower side reaches nearly down to the subsoil.

"At Stone [VI.] was found a deposit of black mould and charcoal, extending beneath the stone. No. [VII.] stands on a small tumulus, lower than either of the others, covering (as did also the soil at No. [VI.]) the same rude pavement, and containing beneath it a quantity of black mould and charcoal, extending under the stone and on either side of it.

¹ As Mr Dalrymple's method of counting the Stones differs from mine, I have altered the numerals, but of course the position of the Stone is the same in relation to the Circle.

"The whole area of the circle was found to be paved closely and firmly with small boulder¹ stones, lying about 6 inches or less below the surface. These stones were occasionally as large as one man could well lift.

"At the south-west side of the circle, where the ground falls away, the deficiency is made up by a sort of rude step of stones, thus raising the height to that of the rest of the circle, and making the area tolerably level.

"The small inner circle before mentioned [C in the plan] contained, beneath the pavement, a quantity of black mould, mixed with small fragments of charcoal and occasional small pieces of incinerated bones. These traces extended as far as the circumscribing crescents of small stones which mark the inner circle; but beyond them no bones were found, the soil being throughout the outer part of the circle quite different in character—a sandy loam, mixed throughout with small bits of charcoal, not presenting the appearance of black mould, but of yellow dotted with black.

"This seemed to extend everywhere down to the subsoil.

"At No. [L, several feet within the base of the stone] were found two deposits of black mould, mixed with fragments of urns.

"The whole of the urns seemed to have been thick and massive in material, and to have been burnt; but the subsoil, being very *close*,^{*} was particularly unfavourable for the preservation of any remains.

"The question suggests itself whether, from the thinness of the soil everywhere covering the rude pavement throughout the circle, the pavement had not been originally *bare*, but *had become covered* with soil, formed by the decay of vegetable substance, etc. etc., during the lapse of many ages. The area of this circle had evidently never been disturbed by tillage or planting, and the pavement seemed to be everywhere in its original state."

Apart from the clear presentation of the platform in this plan and

¹ Compare remarks on the central portion of the Circle at Balquhain in *Proceedings*, vol. xxxv. p. 255.

description by Mr C. E. Dalrymple, the account is valuable because it quite as clearly points out in what, to us, strange portion of the megalithic arrangement we must search for interments before we venture to pronounce an opinion on the barren condition of the site.

During our investigations there were found traces, and on some sites rather more than traces, of this platform at the following localities:— Auchquhorthies (Kincausie), Tyrebagger (Dyce), Tonnamorn, Whitehill (Monymusk), Cothiemuir Wood, Old Keig, Auchquhorthies (Fetternear, Inverurie), Balquhain, Hatton of Arloyn, and Loanhead in Daviot. These examples are sufficiently numerous to prove that the platform in front of the Recumbent Stone is an integral part of the original structure in this type of Circle: and this being so, we may fairly conclude also that the great low-set slabs which spring out of the ends of the platform and then expand into the circumference of the inner setting are part and parcel of the original design, as exemplified in several of the Circles just mentioned.

Concerning one other special detail, conspicuous in only a few of the sites examined, the presence, I mean, of two large blocks of stone projecting inwards from the Recumbent Stone nearly at right angles, we have not discovered any facts helpful towards the apprehension of their purpose.¹ These projecting blocks occur at Auchquhorthies in Fetternear, at Tyrebagger or Dyce, where they have been moved out of place, at Cothiemuir Wood (partially), at New Craig partially, at Airdlair in Kennethmont, and at Ardhill, Rothiemay, where they seem to be flush with the ground.

Mains of Moudurno, Old Machar.—This site, which is marked on the 25 inch scale O.M. by a group of three Stones, was not examined during any of our regular surveying months, partly because, being so near Aberdeen, we invariably postponed a visit, partly also because stress of weather prevented us in reaching the site on the few occasions that an hour or two were spent in the Granite City.

¹ Observers who theorise upon scanty *data* suggest that the Recumbent Stone rested on these blocks.

TABULAR SUMMARY OF CIRCLES SURVEYED IN 1903.

Survey No.	Locality.	Parish.	Diameters in feet.	Peculiar Features.	Relics Found.
2	Greenhill	Ornden		Only one stone left.	
4	Skelmuir Hill	"		Two stones left.	
9	Auchnaldhie	New Deer		Recumbent Stone and West Pillar left.	
13	Aikey Brae	Old Deer		Particularly well-defined bank	Insufficiently examined.
14	Louden Wood	"		Recumbent Stone in unusual position.	
15	Auchmachar		About 50'	Recumbent Stone.	
16	White Gow Wood	Strichen	46' 8"	Really the remains of a Cairn.	
18	In the grounds of Strichen House	"		None of the stones in original positions.	
19	Gaval			Recumbent Stone.	
21	Auchnagorth		41' 6"	Ten stones in the ring.	
22	Netherton of Logie	Crinoid	57'	Recumbent Stone.	Apparently undisturbed.
23	Berrybrae	Lounay	45'	Recumbent Stone.	
24	Cortie Brae	"	...	Two Stones left.	
25	Clochforbie		...	Recumbent Stone left.	

However, being requested by the council of the Buchan Field Club to read a paper on the Stone Circles, at Peterhead on the 1st February 1904, I so arranged my journey as to admit of going out beyond the Bridge of Don to see the remains at Mundurno.

The site has long been known as that of a Circle, but no further details were available on the day of my visit, through inquiries made in the locality. The one stone now extant is a fine vertical pillar of quartz-veined whinstone, 7 feet in height, set on a perfectly level piece of ground a quarter of a mile west of the Mains of Mundurno, at a height of 200 feet above the sea. This field would on a clear day command an extensive prospect; and though there is higher ground in close proximity, it is not high enough or near enough to overshadow the spot.

The Stone girths at the base 10 feet 5 inches, and its longer axis trends N.W. (mag.).

II.

GLENCORSE OLD CHURCH AND CHURCHYARD. BY ALAN REID.

F.E.L.S., F.S.A. Scot. (WITH PHOTOGRAPHS BY JAMES MOFFAT.)

Gray might well have found the subject of his "Elegy" in that quaint "God's Acre," lying under the shelter of "Pentland's towering tap." It has all the glamour of age and the grace of beauty; and over these is cast, and through them runs the spell of Robert Louis Stevenson.

Writing from Vailima in May 1893, he said to his friend Mr S. R. Crockett, "I shall never take that walk by the Fishers' Tryst and Glencorse. . . . Here I am until I die, and here will I be buried. . . . Do you know where the road crosses the burn under Glencorse Church? Go there and say a prayer for me: *moriturus salutat*. See that it's a sunny day . . . and stand on the right-hand bank, just where the road goes down into the water, and shut your eyes, and if I don't appear to you—well, it can't be helped, and will be extremely funny."

Glencorse proper lies midway on the cross-road leading from near the

Mauae at Crosshouse to the Fishers' Tryst at Milton Bridge. The old church, solitary but not lonely, crowns the summit of a water-worn knoll, and close by is Glencorse House, famous as the residence of Lord President Inglis. Singularly shy and retiring for all its elevation and modern wooden spire, the fabric is passed by many, even in the search for it. Great trees conceal it from the casual view, but the steep road by the end of Glencorse lodge leads sheer to the unlocked wicket at the churchyard entrance. Symbolism seems almost to have reached a climax in the nomenclature and disposition of these rural subjects. Accidentally, doubtless, but none the less really, their plan is singular and very striking. The churchyard conforms almost strictly to the orthodox shape of a *coffin*, with the church, a perfect *cross*, attached like a name-plate to the repository of the dead!

The meagre description of the fabric given in the standard work on such architecture scarcely prepares one for so many points of interest and beauty as are easily apparent to every visitor. "It is a long, narrow structure, with a south transept containing the Woodhouselee loft," is nearly all vouchsafed us by authority; but as a matter of fact there are two transepts, equal in size and nearly similar in style, and these give the building the cruciform appearance so evident in the plan.

The outside stairs giving access to the Lords' lofts are remarkable enough for detailed description, so graceful are they in structure, proportions, and adornments among their compeers. Then the armorial bearings on each side of both stair doors are quite noteworthy, as is the tower—even with its modern though elegant wooden spire—the vault under the Glencorse aisle, the string-courses and the mouldings generally, and many other details peeping here and there from their dark mantling of ivy.

In connection with fig. 2, which shows the stair and entrance to the Glencorse transept, and on the left the private path leading to the mansion-house, it will be interesting to quote from another of Stevenson's famous letters. In 1875 he wrote from Swanston to Mrs Sitwell, and confessed—"I've been to church, and am not depressed—a great

step. I was at that beautiful church my *petit poème* e prose was about. . . . Old Mr Tenence preached—over eighty, and a relic of times forgotten, with his black thread gloves and mild old foolish face. One of the nicest parts of it was to see John Inghis, the greatest man in

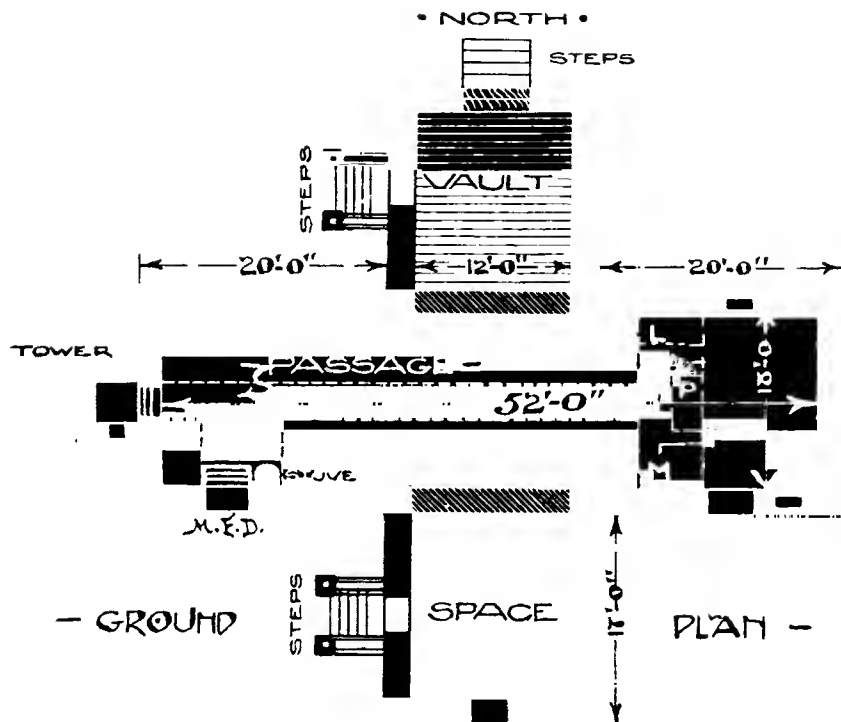


Fig. 1. Plan of Glencorse Old Church.

Scotland, our Justice-General, and the only born lawyer I ever heard, listening to the piping old body, as though it had been a revelation, grave and respectful."

In the plan, and on the authority of the Rev W. B. Strong,¹ minister

¹ Mr Strong has also informed me that the floor level was "two or three steps" lower than the ground outside. These steps are indicated on the plan at M.E.D. (main entrance door).

of the parish, the position of the pulpit and pews in the later arrangements of the old building is indicated. A gallery filled the west end, access to which was by a short stair leading from the tower. The pulpit was placed against a partition wall which ran to the roof, the

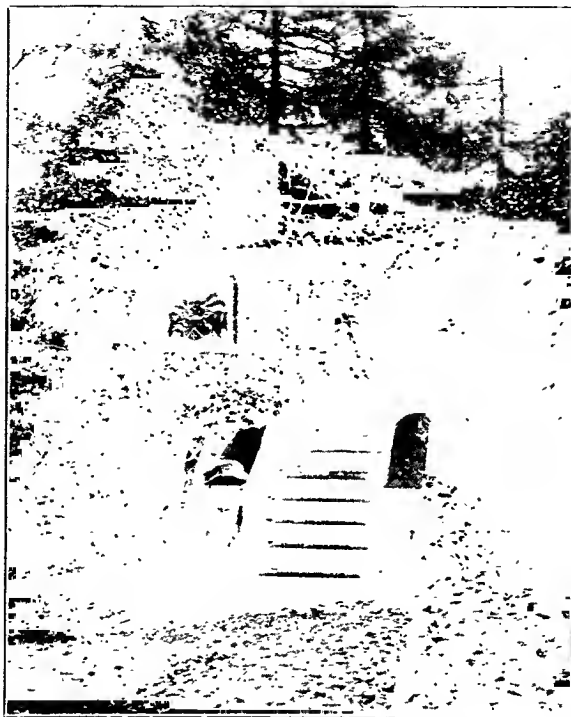


Fig. 2. Stair and Entrance to Transept.

space behind forming a lobby of entrance, and holding the stair which led to the vestry behind the pulpit. The precentor had his 'lectern,' or desk, in front of the pulpit; the Loganbank sitters were accommodated on cross-seats placed on the right of the minister, and the Manse hearers sat similarly on his left.

Chief among the architectural features that remain is the beautiful

traciated window of the south transept or loft. Of this charming detail the authority already quoted remarks—"The south end of this transept is the only part having any architectural value. The traciated wheel-window is remarkable, and very characteristic of the period."

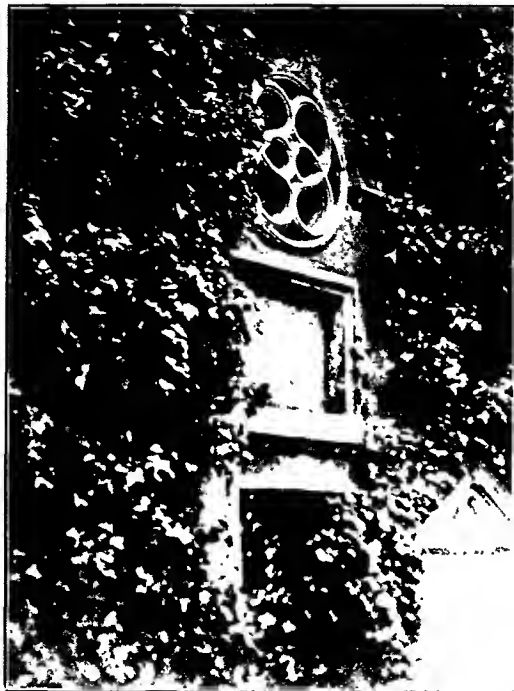


Fig. 3. Traciated Window in South Transept.

The photograph copied in fig. 3 shows a window which is not a wheel-window, nor is it circular in shape. It is fairly oval, and has its traceries disposed, not as the radiations of a wheel, but in the semblance of two hearts intertwined. Outside and inside the mouldings are identical, the workmanship being good and comparatively elegant. A finely moulded panel occupies the space between the doorway and the traciated

light, but the tablet has been removed. The space under this loft was used simply as a tool-house by the sexton, the small 'resurrection house' at the gate being used as a shelter by the elders who 'watched the plate,' placed on a stool outside. Our remarks on the architecture of Glencorse Old Church may fitly close with a further quotation from Stevenson's letter to Mrs Sitwell. He says:—"It is a little cruciform place, with heavy cornices and stringcourse to match, and a steep slate roof. The small kirkyard is full of old gravestones. One of a Frenchman from Dunkerque—I suppose he died prisoner in the military prison hard by¹—and one, the most pathetic memorial I ever saw, a poor school-slate, in a wooden frame, with the inscription cut into it evidently by the father's own hand."

The history of the parish and church is simple in the extreme. In 1588 the charge was held with Penicuik, and from the next year onwards by Lasswade, with which it was conjoined by Act of Parliament before the year 1612. To quote from Dr Hew Scott's "Fasti," "It was proposed to unite the parish to Penicuik, 10th January 1612. In 1615 various communings were held with the Presbytery that a minister might be procured for itself, which probably led to the appointment of a colleague for Lasswade in 1616, who probably had charge of Glencorse, and led to its being stated that the erection of the parish took place in 1616, though it is certain no minister was appointed till 1636."

The date over the main entrance door is 1636. Over the traceried window in the Woodhouselee loft appears the date 1669, the date of a rebuilding after fire, at which time the transepts seem to have been added to the original structure. Again, in 1811, a thorough renovation was made, the tower, crowned with a neat belfry roof, having at that time been added. During these repairs the ancient baptismal font was discovered among the debris of the early burning. This relic of the past has been transferred to the fine new church erected in 1884-5, from the designs of Dr Rowand Anderson. This font is of one block of stone, cubical in

¹ This old military prison was turned into paper-mills by the Messrs Cowan.

form, 19 inches square, with a circular hollowed basin 14 inches wide. It is now mounted on a modern pillared base of some elegance, and is in frequent use. Its only ornamentation is a roll bevel worked round the top edge and angles. From the leaded socketings in the top it is evident that the font had originally been covered.

The arms sculptured on the south transept are those of Sir William Purves, Bart. of Woodhouselee, Advocate. In 1669 the Scottish Parliament ratified a royal grant in favour of this gentleman, along with the patronage of the Kirk of Glencorse. (In 1676 the same lands, barony, and patronage were ratified to James Deans, writer in Edinburgh.) At a Presbyterial visitation at Glencorse in September 1673, as is shown by Dalkeith Presbytery records, "the minister did show that there was two Communion cups gifted by Sir Wm. Purves, a table cloth for the Communion table, a laver, and a basin of tin for baptism."

We come now to examine the Tombstone Memorials, and naturally turn, not to the older monuments, but to those that made their mute appeal to Stevenson, and are sought out by many visitors largely for his sake. The "Dunkerque" stone (fig. 4) stands near the N.E. corner of the church. It is a plain, round-topped slab, bearing on its obverse side a Latin cross, and on its front the simple inscription—

ICI REPOSE CHARLES
COTTIER DE DUNKERQUE
MORT LE 8 JANVIER 1807

"The most pathetic memorial I ever saw" (fig. 5) has its inscription deeply incised on the slate, in a free script hand, as follows:— 'Sacred to the memory of Catherine Ogg, the beloved child of James Henderson, 42nd Highlanders, who died at Greenlaw on the 25th October 1869, aged seven months.' This simple 'classic' is to be found in front of the Somerville-Dalmore Tomb, a couple of paces northwards of Sir John Cowan's grave, and on the left as the visitor enters the ground.

The older tombstones are remarkably well-preserved, and present a variety of emblems, symbols, and inscriptions, exceedingly interesting, and in some respects original or unique. For example, a monument of



Fig. 4. The "Dunkerque" Stone.



Fig. 5. The "Pathetic Memorial."

1713 (fig. 6), standing against the Woodhouselee stair, has its inscription carved in *curved* lines, with graceful draperies, hanging as if but temporarily removed to show the legend beneath:—

HERE LYES
JAMES CRAIGE
DYED NOVE 18
1713 AGED 48
WAS TENNENT
IN THE HOUS OF
MURE



Fig. 6. The Drapered Stone.

This monument may fairly be termed beautiful: the cherub heads under a floriated pediment are well-proportioned, correct in drawing, and pleasant in expression. Fluted pilasters support the pediment, and a winged cherub head peeps from under the centre of the base moulding. A couple of spades support the pillars, emblematic of the calling of the erstwhile tenant of the House of Muir farm.

Again, there are two stones, very evidently cut by the same hand, and designed by the same mind, which show a peculiarity almost ludicrous. Both of these monuments have sunk panels, as shown in the next photograph, and both exhibit the defect of workmanship which gives them their distinctive character. In the upper front panels, and in the



FIG. 7. The "Squint" Tombstone.

length of only 18 inches, the mason has gone a full inch astray with his parallels, the effect being, as has been said, ludicrous. More, the squint does not appear in the corresponding panels on the obverse sides of the stones, and otherwise these massive 9-inch-thick tablets are carefully worked and cleanly moulded. The example first shown (fig. 7) bears in the squint panel the legend *EGIT HORA*, and is inscribed:—

HERE LYES HELEN
IOHNSTOWN SPOVSE
TO IAMES MEGGAT
WHO DEPARTED THIS
LIFE 10 MAY 1622 HER
AGE WAS 32 YEARS.



Fig. 8. A Cherub Head

The obverse side has initials only, is dated 1694, and bears as emblems a skull, crossbones, and sandglass of inferior design. This very old stone measures above ground 3 feet 6 inches by 3 feet 9 inches.

Close to the entrance-gate is a small stone bearing on the front the

date 1769 with the usual inscription, and on the back (fig. 8) a very striking and quaint example of the winged cherub head. This stone has been mutilated, and a broken stay-band adds to its dilapidated appearance. There is, however, a touch of true character and rude appropriateness in its style and proportions.

A little to the right, an elegantly carved mural tablet, of 1743, invites comparison with the last stone, which is of later date. Here we



Fig 9 An Emblematic Centre-piece.

find the legend *MEMENTO MORI*, and the emblems of Death arrayed and arranged in a manner somewhat remarkable. They appear as if fastened together by a ribbon suspended from a ring (fig 9), the centre of a pretty large panel being used to display the finely relieved emblems. The inscription appears to right and left of the sculpture, but no interest attaches to the facts stated in the lettering.

The earliest date legible is 1618. It occurs on a flat, lichen-covered slab, which lies flush with the grass near the S.E. door of the church.

As this stone is very old, and in some respects typical, it may be well to show the arrangement of the lettering of its ancient inscription:—

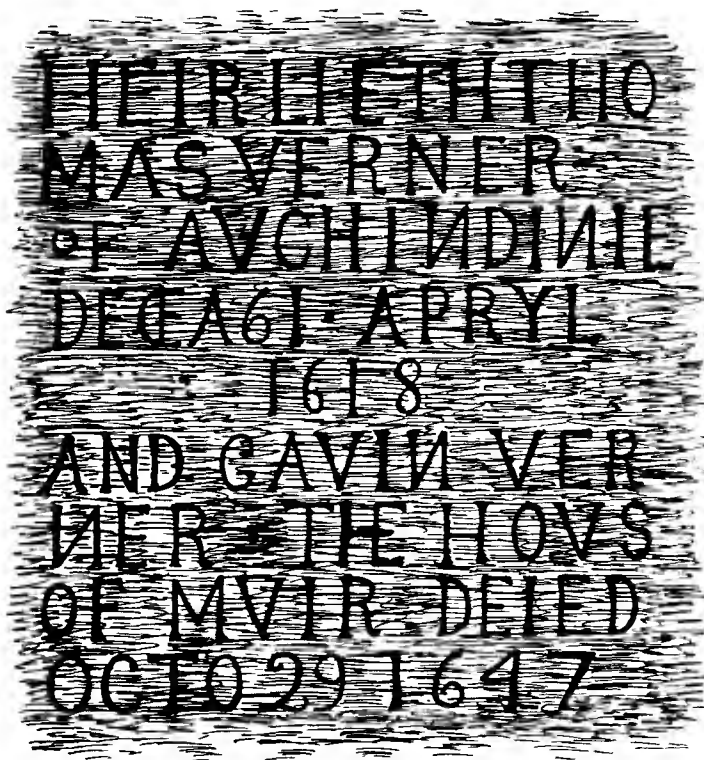


Fig. 10. The Earliest Tombstone Inscription.

Beside the low door of the south transept there is a table stone, the only example in the churchyard, and a makeshift at the best. Examination shows that this stone has at one time been erect, and that its supports—one across each end—are also stones that at some other period have figured independently. The large table slab is

dated 1742, and the westmost support bears the usual mortuary symbols. Among a number of interesting fragments is a portion of a memorial to Alexander Ferguson, Schoolmaster, showing a curious cherub head: and a very finely chiselled monument of 1704, which, though shorn of its pediment, arrests attention by its style and execution. The front is flanked by half-round pillars with Gothic capitals and correct bases, these being repeated on the back by flat panelled pilasters of a distinctly classic type. This carving on both sides of these old stones is noteworthy, as is also the fact that several of them have done duty in commemorating different families.

The classic designs shown in the next two photographs are of much merit, the more so when their age is considered. Both are mural, and the first dates from 1677. The emblematic pediment (fig. 11) is of a character quite different from the substructure, but the divergence is not unpleasant. The winged sandglass and fine cherub head, the skull over the single bone, with the head of Deity crowning the whole, make this a notable example of the class to which it belongs.

Even more elaborate in detail is the second of these classic examples (fig. 12), a stone built against the east gable of the church, and bearing the date 1727 on the keystone of the moulding surrounding the inscribed panel. Here the pediment is filled by a dignified angel head, the base exhibiting as emblems crossed spades, cross-bones, skull, sandglass, and the legend REMEMBER DEATH. In inscribing the stone, the mason has run three of the letters of a word right over the three members of the enclosing moulding, another remarkable feature of his work being the free spelling of the word Abernethy.

In marked contrast with these beautiful sculptures is the monument to Robert Brown, which is dated 1745. On the opposite side to that shown in fig. 13 a couple of flaming torches do duty as pilasters and supporters of the moulding round the pediment. On the top edge of

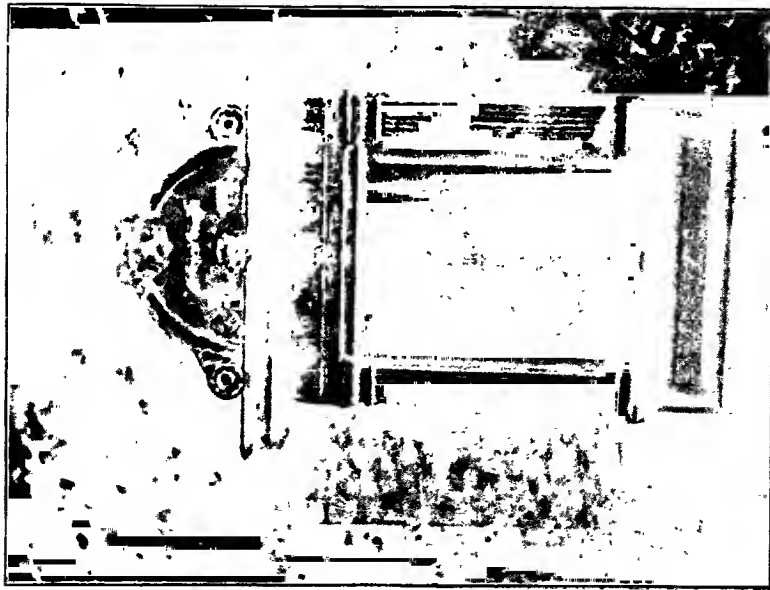


Fig. 11. Emblematic Pediment, of 1677.

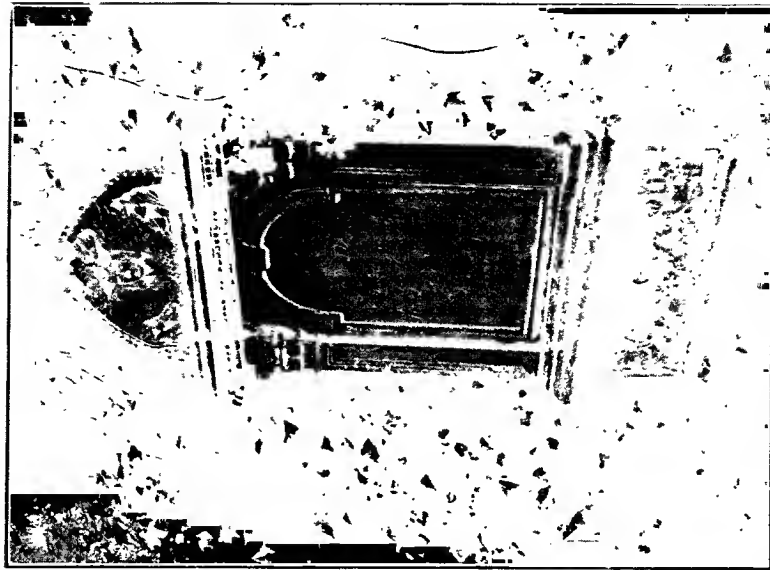


Fig. 12. The "Abemethy" Stone.

the slab *MEMENTO MORE* is incised, and on the east side, here shown, a scroll bears the same legend. The emblems are a scythe, a dart, a skull and crossbones, crudely carved, and cruelly suggestive.

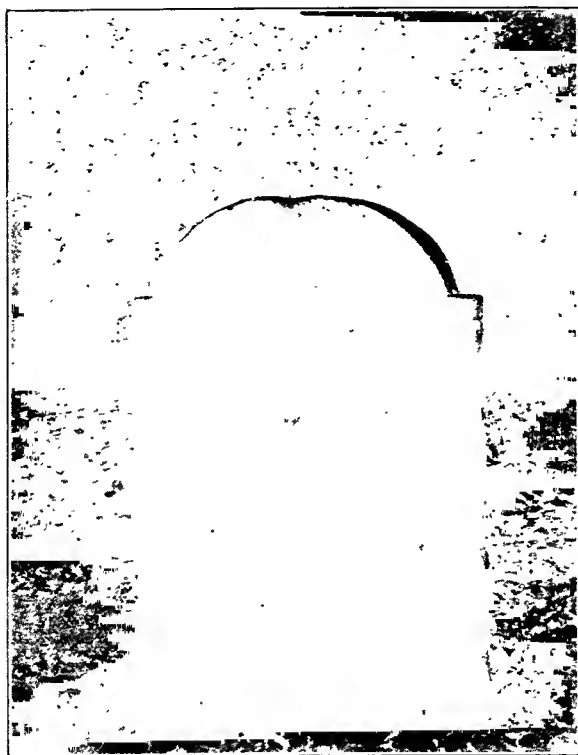


Fig. 13. Art of 1745.

The inscribed front of the next stone, which dates from 1694, shows the remarkable squint before noticed. The obverse, here shown in fig. 14, does not run askew ; and the photograph from the set, kindly made for this paper by Mr James Moffat, presents the design admirably. The pediment is filled with a winged cherub head, the

feathering being very delicately rendered, but the emblems of mortality are rather repulsive.

As is to be expected in a rural parish like Glencorse, the churchyard memorials to Farmers, Millers, and Gardeners are in the majority.



Fig. 14. Art of 1694.

The latter class are represented emblematically by several well-carved Reels, a monument of 1753 (fig. 15) showing the best of these devices. The occurrence of the single bone may also be noted.

The memorial of a Penicuik Miller (fig. 16) bears a grotesque head, the mill stones with the mill-rynd, and a single bone under the date 1754.

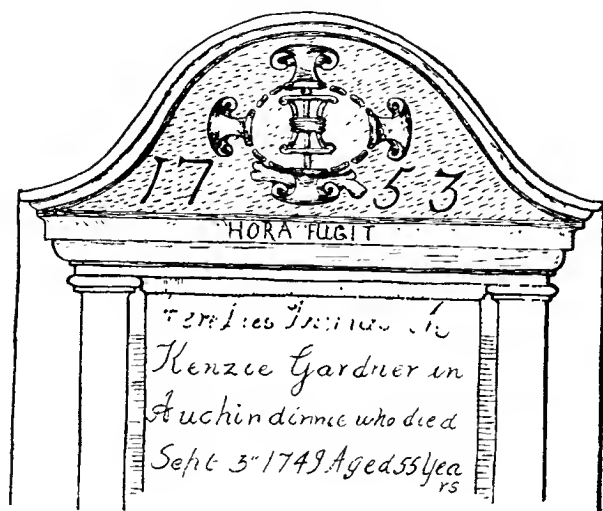


Fig. 15. A Gardener's Tombstone.



Fig. 16. A Miller's Memorial

The inscriptional gem of the churchyard is found on a roughly pointed slab of no great age, which stands near the east end of the enclosure. Its quaint rhymes have a great attraction for many who visit this charming retreat, and we may leave it, as many do, with their unconscious humour enlivening somewhat our more serious reflections:—

“ Death is not Care, it is not pain,	“ This stone is for to mark the ground
But it is rest and peace :	Where Mary Simpson lies :
Death makes all our Terrors vain,	Lawful wife to John M’Kean,
And bids our Torments cease.	Till death did close her eyes.

“ Departed life at Marfield Lodge,
The sixteenth of July,
Eighteen hundred and forty-two,
Where she did calmly die.”

III.

A PROPOSED CHRONOLOGICAL ARRANGEMENT OF THE DRINKING-CUP OR BEAKER CLASS OF FICTILIA IN BRITAIN. BY THE HON. JOHN ABERCROMBY, SECRETARY.

Generally speaking, the whole ceramic material of the Bronze Age is presented to the student as being nearly on the same plane. Hardly any attempt is made to discriminate between earlier and later forms: and when this has been done, the true chronological order has sometimes been inverted. Considering the great duration of the Bronze Age, such a presentation of the subject is unsatisfactory. If sufficient light were thrown upon it, this ceramic material would be seen in perspective, in a series of planes ranging back from the foreground to the extreme distance in an orderly manner.

It is often lamented that in the prehistoric period there are no written documents. Although there are no manuscripts of so remote a time, yet in the fictilia of the Bronze Age we have a surrogate that is not to be despised. If properly interpreted, it can be made to yield no small degree of information. Its mere quantity gives it importance. It was constantly being manufactured, and so was in thorough touch with its

time. It was too rude to be imported or carried to a distance, and so possesses a local and homely interest in a measure that no other relic of the past can attain to.

In attacking the problem of the arrangement of the Bronze Age ceramic in chronological order, it is better and easier to begin at the extreme end and work downwards in time. To do otherwise would involve enormous, almost insurmountable difficulties. The first question, then, to settle is, which is the oldest type of Bronze Age pottery in the British Islands? In a paper read before the British Association at Belfast in 1902, and again before the Anthropological Institute in London (*Journ. Anthropol. Inst.*, vol. xxxii. 375-394), I tried to show that the oldest class of pottery of the Bronze Age is the 'drinking-cup.' For reasons given in the paper, for this term I proposed to substitute the word 'beaker,' as being shorter, more international, and more appropriate. It is the only class of Bronze Age ceramic in Britain that is found associated with large, well-made flint daggers of neolithic aspect. With the exception of an early type of bronze dagger and other early pieces of metal, it is only found with stone bracers, conical jet beads with a V-shaped perforation at the base, and other objects which on the Continent are attributed to the end of the Neolithic Age, which includes a transition period when copper was coming into use. In the above paper I showed that types α , β , must have come to us from the Continent in the first instance, the latter type more especially from the valley of the Central Rhine, about half a degree north and south of latitude 50° , where it cuts the river at Mayence.

Whether the earlier part of the British beaker ceramic belongs to the Transition or Copper period is largely a matter of terminology. According to the terminology of Oscar Montelius, the beginning of the Bronze Age is divided into two sections, written as follows: "Bronze Age. Period 1 : 1 or Copper Age. Bronze Age. Period 1 : 2 or Bronze Age proper." All flat axes, many of which are of copper, belong to Period 1 : 1, but flanged axes are assigned to Period 1 : 2. As the flat triangular knife-daggers sometimes found with beakers are

also sometimes associated with flat axes, some beakers must belong to Period I : 1 or the Copper period. But as beaker No. 72 of β 1 is a little later than or contemporary with four flanged axes, all beakers later than it must belong to the true Bronze Age. The British beaker class may therefore represent a transition from Period I : 1 to I : 2, and on the whole is doubtless later than the beaker types on the Continent. The late Dr Thurnam, shortly before his death in 1871, published in *Archæologia* (vol. 43, pp. 331-400), the best monograph on "British Fictile Vessels" that has yet appeared. In it he divided the Drinking-Cup or Beaker-class of sepulchral pottery into three types, which he designated α , β , γ . These types I retain, but subdivide them provisionally into 15 sub-types, α 1-6, β 1-4, γ 1-5.

α . High-brimmed globose cup.

β . Ovoid cup with recurved rim.

γ . Low-brimmed cup.

TYPE α .

The beaker of type α originally consisted of two organic parts, a body and a neck.

Sub-type α 1.

At first the body is more or less globose: the height of body and neck is almost equal: at the base of the neck there is a constriction: the neck is wide with straight sides, which expand more or less outwards: sometimes the neck curves slightly inwards towards the top. By degrees the constriction tends to become obliterated, and the body, which still remains globose, passes into the neck with a gentle curve. There are 20 examples of this sub-type, of which 16 are here reproduced.

No. 1. from Seven Barrows, Lambourn Down, Berks, is $7\frac{1}{8}$ inches high, and now in the British Museum.

No. 2. from barrow 36, Stonehenge, is $7\frac{1}{8}$ inches high, and now in the Devizes Museum.

No. 3. from barrow 39, Stonehenge, is $8\frac{1}{2}$ inches high, and now in the Devizes Museum. It was found with a fine flint dagger, $7\frac{1}{2}$ inches long, the same type as one figured by Sir J. Evans (*Anc. Stone Impl.*, fig. 264.)

No. 4, from barrow 37, Garton Slack, East Riding, is now in Mr Mortimer's museum at Driffield, Yorkshire. It was found at the centre of the barrow, about 1 foot below the natural level, with a very fine flint dagger, 7 inches long, and a perforated axe-hammer.

No. 5, from Green Low, Alsop Moor, Derbyshire, is $7\frac{1}{4}$ inches high, and now in the Sheffield Museum. It was found in a grave at the centre of the barrow, with a male skeleton, a splendid flint dagger 6 inches long, a flint implement with a circular head, and a piece of spherical pyrites. Lower down were three beautifully chipped arrow-heads with barbs and stems, and three bone instruments, much like a mesh-rule. (Bateman, *Vestiges*, pp. 59-60.)

No. 5 a, b, from Winterbourn Monkton, N. Wilts. They were found in a cist covered by a large stone, with a male skeleton, a recurved knife of flint $3\frac{1}{2}$ inches long and finely chipped, a large jet button almost 3 inches in diameter with a V-shaped perforation at the base, two other jet buttons, and a jet 'pulley ring.' (*Cranio Britan.* ii. p. 58 (2).)

No. 6, from Haddon Field, Bakewell, Derbyshire, is $6\frac{1}{2}$ inches high, and now in the Sheffield Museum. It was found under the centre of a cairn of large stones, with a flint arrow-head, a small bronze awl, and a 'mesh-rule' of deer's horn $6\frac{1}{4}$ inches long. (Bateman, *Ten Years*, p. 106.)

No. 6 a, from Figheldean, Wilts, is $7\frac{1}{4}$ inches high, and now in the British Museum.

No. 7, from barrow 93, Durrington, Wilts, is $7\frac{1}{2}$ inches high, and now in the Devizes Museum.

No. 7 a, from Avebury, Wilts. It was found in a cist under a barrow, with a bronze knife-dagger 4 inches long with three rivet-holes, and a perforated stone axe 5 inches long. (*Proc. Arch. Instit.*, 1849, p. 119, figs. 12, 13.)

No. 7 b, from Grind Low, Derbyshire, is $4\frac{1}{2}$ inches high. (*Reliquary*, in. p. 206.)

No. 8, from barrow 5, Winterbourn Stoke, Wilts, is $5\frac{3}{4}$ inches high, and now in the Devizes Museum. With it was a 'pulley ring' and a large round jet button $1\frac{1}{2}$ inches in diameter. A so-called 'pulley ring' from Yorkshire is figured by Canon Greenwell (*Brit. Barrows*, fig. 123).

No. 9, from Needham Market, Suffolk, is $6\frac{1}{4}$ inches high, and now in the British Museum.

No. 10, from Rothbury, Northumberland, is $6\frac{1}{2}$ inches high, and now in the British Museum.

No. 11, from Smeril Moor, Derbyshire, is nearly 9 inches high, and is now in the Sheffield Museum. It was found in a large, irregular grave 5 feet deep, under a small tumulus, surrounded by an irregular circle of small stones. At the bottom was a skeleton, this beaker, a flint dagger $4\frac{1}{4}$ inches long, a bone 'mesh-rule' 12 inches long, and a flint spear-head 3 inches long. (Bateman, *Ten Years*, pp. 102-3.)

No. 12, from Shiper Low, Brassington Moor, Derbyshire. Found with skeleton of a child. (Bateman, *Vestiges*, p. 52.)

No. 13, from Winterbourn Stoke, Wilts, is 6 inches high, and now in the British Museum. Found with a skeleton having a cephalic index of 80. (*Proc. Soc. of Antiq.*, ser. 2, ii. 429.)

No. 14, from Castern, Wetton, Staffordshire, is $8\frac{3}{4}$ inches high, and now in the Sheffield Museum. The skull of the skeleton had a cephalic index of 85.6. (Bateman, *Vestiges*, pp. 87, 88.)

No. 15, from Dowel, Sterndale, Derbyshire, is $6\frac{1}{4}$ inches high, and now in the Sheffield Museum. Found under a small barrow in a grave cut 3 feet into the sandstone rock, with a skeleton, a conical jet button with the V-shaped perforation, and two flints, one of them an arrow-head. (Bateman, *Ten Years*, p. 106.)

No. 16, from barrow 161, Ferry Fryston, W. Riding, is $6\frac{1}{2}$ inches high, and now in the British Museum. It was found at the centre of the barrow in a grave, as a secondary interment, with a small thin bronze awl $1\frac{1}{16}$ inches long. (Greenwell, *Brit. Bur.*, p. 373.)

Sub-type a2.

Sub-type a2 is a derivative from a1, and branches off about the middle of it, so that they are partly contemporary. The proportions between the body and the neck remain the same, but at No. 17 a shoulder begins to develop, which development takes two directions: (1) it becomes accentuated and angular, while the lower part of the body becomes gradually flat: or (2) the shoulder remains rounded, while the lower part of the body flattens. There are twenty examples of this sub-type, of which sixteen are reproduced.

No. 17, from Bee Low, Youlgreave, Derbyshire, is $6\frac{1}{2}$ inches high, and now in the Sheffield Museum. Found in an irregular grave about 9 feet from the centre, cut in rock, with a skeleton and a very fine flint instrument, which may have been a saw or a knife. The primary interment at the centre consisted of a deposit of burnt bones, and near it fragments of a beaker. (Bateman, *Vestiges*, p. 35; *Ten Years*, p. 72.)

No. 18, from Hay Top Hill, Monal Dale, Derbyshire, is $7\frac{1}{4}$ inches high, and now in the Sheffield Museum. There were several interments in the barrow, but none at the centre. Two food-vessels from one of them seem to be of a rather later type than the one found with 23a. (Bateman, *Ten Years*, p. 76.)

No. 19, from Denton, Lincolnshire, is 6 inches high, and now in the Collection of Canon Greenwell at Durham.

No. 19a, from East Kennet, Wilts, is $7\frac{1}{2}$ inches high. It was found under a barrow, in a grave 5 feet deep, cut into the solid chalk, with a beautiful axe-head of limestone, perforated for a haft, and a flat bronze dagger $5\frac{1}{2}$ inches \times $2\frac{3}{4}$ inches, with 3 rivets. (*Arch. Journ.*, xxiv. 28-29; *Archæology*, vol. 43, figs. 83, 156.)

No. 19b, from Staker Hill, Buxton, Derbyshire, is $7\frac{1}{2}$ inches high, and now in the Sheffield Museum. Found with a female skeleton. Both mastoid bones were stained with green from contact with two small pieces of thin bronze, bent in the middle, just enough to clasp the lobe of the ear. (Bateman, *Ten Years*, 80-81.)

No. 20, from Long Barrow 170, Wilsford Down, Wilts, is 8 inches high, and now in the British Museum.

No. 21, from Rusden Low, Middleton, by Youghave, Derbyshire, is $7\frac{3}{4}$ inches high, and now in the Sheffield Museum. It contained a broken flint implement, and had disturbed a previous interment with fragments of another beaker. (Bateman, *Ten Years*, 43, 44.)

No. 22, from Ram's Croft Field, near Stanhope, Staffordshire, is $6\frac{1}{2}$ inches high, and now in the Sheffield Museum. Found in a circular grave, containing the skeleton of a child and a neat spear-head of flint, slightly burnt. (Bateman, *Ten Years*, 158-9.)

No. 23, from Top Low, Swinscoe, Staffordshire, is 7 inches high, and now in the Sheffield Museum. There were fourteen interments in the barrow; one cist contained the skeleton of a young hog and a tine of stag's horn. (Bateman, *Ten Years*, p. 134.)

No. 23a, from Fimber, E. Riding, is now in the Mortimer Museum at Driffield, E. Riding. It was found at the bottom of a grave cut over 6 feet into the firm chalk under the centre of the barrow. Above it was an inhumed body with a jet necklace. Above this again was a crenated interment, with a food-vessel of a common type. The rim is moulded; at the shoulder, there is a good-sized groove, with four perforated stops or ears. The lower part of this food-vessel is plain. All these interments are undoubtedly contemporaneous. (*Letter from Mr Mortimer*, Nov. 1, 1902.) Both vessels are figured by Jewett in *Ceram. Art.*, figs 30, 55.

No. 24, from Ballymenach, Kilmartin, Argyll, is 7 inches high, and now in the British Museum. It was found in a non-central cist of a sepulchral circle. (*Proc. S.S.I. Scot.*, vi. 348-9.)

No. 25, from Lakenheath, Suffolk, is $7\frac{1}{4}$ inches high, and now in the British Museum.

No. 26, from Waterwold, Yorkshire, is 9 inches high, and now in the British Museum.

No. 27, from barrow 242, Folkton, E. Riding, is $7\frac{1}{4}$ inches high, and now in the British Museum. Found with a child burial 13 feet from the centre. (*Archæol.*, vol. 52, p. 11.)

No. 27a, from Beckhampton, Wilts, is $6\frac{1}{2}$ inches high. (*Proc. Arch. Instit.*, 1849, p. 109, fig. 10.)

No. 28, from Mouse Low, between Deepdale and Grindon, Staffordshire, is $8\frac{1}{4}$ inches high, and now in the Sheffield Museum. Found in a cist at the centre of the barrow, with a skeleton, four beautifully chipped arrow-heads with barbs, a rudely chipped spear-head, and a roughly circular flint implement. The cephalic index of the skeleton was 78.7. (Bateman, *Ten Years*, 115-6.)

No. 29, from Fernworthy Stone Circle, Dartmouth, Devon, is $7\frac{1}{2}$ inches high, and now in the Plymouth Museum.

No. 30, from barrow 21, Ganton, E. Riding, is $7\frac{3}{4}$ inches high, and now in the British Museum. It was found about 9 feet south-east of the centre in a grave $3\frac{1}{2}$ feet below the natural level. It is therefore later than a food-vessel of ill-defined type found at the centre. But it is doubtless earlier than No. 49, which was 12 feet north-east of the centre. (Greenwell, *Brit. Bar.*, pp. 161-6.)

No. 31, from Newhouse farm, St Fagans, Glamorgan, is now in the Cardiff Museum.

No. 32, from barrow 66, Rudstone, E. Riding, is $8\frac{1}{2}$ inches high, and now in the British Museum. It was found below the centre of what seemed to be a round barrow, raised at the west end of a long mound. At 2 feet above the natural surface was the skeleton of a woman and this beaker. Under the woman, on a level with the natural surface, was a beam of wood overlying a grave 2 feet deep, containing an adult body. With it was No. 114 and two round flint scrapers and a small oval scraper. Both interments were secondary. (*Brit. Bar.*, pp. 253-5.)

Sub-type a3.

Sub-type *a3* is a development from *a1*, brought about by the effacement of the constriction at the base of the neck, so that the body and neck are united by a continuous curve. It is distinguished from type *β* by the straight sides of the neck, which occasionally curve slightly inwards towards the top, as also occurs in *a1*. Eventually, the lower part of the body flattens. Nos. 36 to 39 seem to belong to this sub-type, though there are evidently gaps in the series, and No. 39 is older than 38. No. 39a is out of place, and will be mentioned under *a5*. There are nine examples of this sub-group, of which seven are reproduced.

No. 33, from Rams Croft Field, Stanhope, Staffordshire, is 7 inches high, and now in the Sheffield Museum. It was found in a circular grave, 3 feet apart from that in which No. 22 was exhumed. Mr Bateman observed that both beakers are of the same clay, and are so identical in fabric that we may safely conclude that they are the work of the same artist (Bateman, *Ten Years*, 158-9). These two beakers may therefore be regarded as contemporary.

No. 34, from Worlington, Suffolk, is 5 inches high, and now in the British Museum. Found in a gravel-pit with burnt bones.

No. 35, from Brenley, Kent, is $6\frac{1}{2}$ inches high, and now in the Taunton Museum.

No. 35a, from Blandiford racecourse, Dorset, is 6 inches high. Found about 2 feet below the centre, with a skeleton. (Warne, *Ch. Tamar*, ii. p. 19.)

No. 35b. from Broad Down, Houghton, Devon. (Jewitt, *Ceram. Art.*, fig. 43.)

No. 36. from Driffeld, E. Riding, is 7 inches high, and now in the British Museum. Found in a cist under a large barrow, with a skeleton, a stone bracer 6 inches long with two gold-headed bronze rivets at its extremities, and near it a very small bronze buckle (now lost), part of a thin flat bronze dagger in a wooden sheath, 3 large conical amber buttons with a V-shaped perforation. The body had been wrapt in linen from head to foot. (*Archæol.*, xxxiv., pl. xx. figs. 6, 8.)

No. 37. from Woodhorn, Northumberland, is $6\frac{1}{2}$ inches high, and now in the British Museum.

No. 38. from Broomend, parish of Kintore, Aberdeen-shire, is 7 inches high, and now in the National Museum, Edinburgh. It was found in a cist with No. 140.

No. 39. from barrow 60, Thwing, E. Riding, is 9 inches high, and now in the British Museum. Found with a skeleton $13\frac{1}{2}$ feet from the centre. At the centre, in a grave 4 feet deep, was a skeleton interment, with a 'pulley ring' and an ornamented conical jet button with the V-shaped perforation, and fragments of a beaker. (*Brit. Barrows*, 226-8, figs 3, 5.)

No. 39a. from Windmill Quarry, Wincanton, Somerset, is $9\frac{1}{2}$ inches high, and now in the Taunton Museum. With it were deer bones and a circular flint scraper.

Sub-type a4

Sub-type a4 is evidently a derivative from a2, and branches off about the middle of it. It is confined to the northern part of Britain. It differs from a2 in having a shorter neck, but agrees with it in the flattening of the lower part of the body. The first of the sub-type from Manderston, Berwickshire, is like No. 24 from Argyll, though the shoulder is higher and the neck proportionally shorter, in this respect agreeing with the Fimber example of a2. Nos. 40, 41 seem to be variations or sports of this sub-type, for neither can be placed in a1. There are eight examples of this sub-type, of which four are reproduced.

No. 40a. from Manderston, Berwickshire, was found in a cist while digging for sand and gravel. The cover-stone lay about 6 inches below the surface. (*Berwick Nat. Club* (1882-4), p. 394, pl. 1.)

No. 40. from the Hill of Moss-plat, Carlisle, Lanarkshire, is $7\frac{1}{2}$ inches high, and now in the National Museum in Edinburgh. Found under a cairn.

No. 41. from Eckford, Roxburgh, is $8\frac{1}{4}$ inches high, and now in the National Museum, Edinburgh. The bottom of this beaker is ornamented with chevrony lines. (*Proc. S.A. Scot.*, xxv. 29.)

No. 41a, from Amble, Northumberland, is 8 inches high, and now in the Alnwick Castle Museum. Found in a cist dug out of friable shale, with a skeleton, a fragment of flint, and another vessel broken in pieces. (*Arch. Journ.*, xiv. 262; *Catal. of Alnwick Cast. Mus.*, pl. xiv. fig. 1.)

No. 41b, from Beanley Moor, Northumberland, is now in the Alnwick Castle Museum. (*Alnwick Cast. Mus.*, pl. xii.)

No. 42, from Juniper Green, Midlothian, is $6\frac{1}{2}$ inches high, and now in the National Museum, Edinburgh.

No. 43, from Dairsie, Fife, is 7 $\frac{3}{4}$ inches high, and now in the National Museum, Edinburgh. Found in a cist in a sand-pit with four small flint arrow-heads, barbed and stemmed. (*Proc. S.A. Scot.* xxi. 132.)

No. 43a, from Tippermallo, Methven, Perthshire, is $5\frac{3}{4}$ inches high. Found in a cultivated field in a cist about 1 foot below the surface. With a decayed skeleton was this beaker, a fine circular flint scraper $1\frac{7}{8}$ inches in diameter, and a flint-flake knife or scraper $1\frac{1}{2}$ inches long, worked to an edge on both sides. (*Proc. S.A. Scot.*, xxxiii. pp. 145-6.)

Sub-type a5.

Sub-type *a5* is a small sub-type, the exact origin of which is not clear, though its low height and the central position of the constriction allows it to be compared with No. 8 of *a1* from Wilts. Geographically, it is found in the east and west of South Britain, in Suffolk and Wales; chronologically it precedes *a6*, as No. 45 is undoubtedly older than No. 52. No. 47 seems to be a variety or development of this sub-type, and with it may be associated 39a, which otherwise stands isolated, though both appear to lead up to *γ1*. There are seven examples of this sub-type, of which four are reproduced.

No. 44, from Tuddenham, Suffolk, is $5\frac{3}{4}$ inches high, and now in the British Museum.

No. 45, from Curdle Head, Eriswell, near Lakenheath, Suffolk, is $7\frac{1}{2}$ inches high, and now in the Cambridge Museum.

No. 45a, from Castleacre, Norfolk, is now in the Norwich Museum. It is not well figured by Ll. Jewitt in *Ceram. Art of Great Britain*, fig. 1.

No. 45b, from Aberbechan, near Newton, Monmouth, is 4 inches high. (*Archæologia*, vol. 43, fig. 86.)

No. 46, from Moel Hebog, Snowdonia, Carnarvon, is $5\frac{1}{2}$ inches high, and now in the British Museum.

No. 47, from Snailwell, near Newmarket, Cambridgeshire, is $7\frac{1}{2}$ inches high, and now in the Cambridge Museum.

Sub-type a6.

This sub-type is derived from a2 and a5, by gradual degradation till the beaker becomes little more than a pot. The angles at the shoulder, visible at the beginning of the series, gradually disappear and the walls become more and more straight. The later date of this sub-type is evinced not only by the form but by the change in technic. The ornament on the beakers from Nos. 52-56 is produced, not with a notched instrument as in the older period, but with a pointed instrument, as is often the case on beakers of type γ . Nos. 52, 57 and 57a descend from a5, the others from a2. There are eleven examples of this sub-type, of which ten are reproduced.

No. 48. from barrow 63, Rudstone, E. Riding, is $5\frac{1}{2}$ inches high, and now in the British Museum. It was found 16 feet from the centre, with the body of a very young child, at a depth of only 4 inches below the natural surface. At the centre of the barrow was a secondary interment, beside which lay a food-vessel of the same type as that found with No. 23a, and with five perforated ears. With it was a beautifully barbed and stemmed flint arrow-head. The food-vessel is probably older than the beaker. (*Brit. Barrows*, pp. 247-9.)

No. 49. from barrow 21, Ganton, E. Riding, is $7\frac{3}{4}$ inches high, and now in the British Museum. Found, with the body of a child, at a distance of 12 feet from the centre of the barrow, and is therefore younger than No. 30, which lay nearer the centre.

No. 50. from Munning Low, Derbyshire, is $8\frac{1}{4}$ inches high, and now in the Sheffield Museum. At the south side of the barrow a skeleton was found at a very inconsiderable depth, and near the shoulders this beaker and a small bronze pin or awl, pointed at each end, and a rude spear or arrow-head of flint. (Bakenan, *Utopia*, p. 41.)

No. 51. from Poleshead Road, Oxford, is now in the Ashmolean Museum.

No. 52. from Snailwell, near Newmarket, Cambridge-shire, is $5\frac{1}{2}$ inches high, and now in the Cambridge Museum.

No. 53. from Lake, Wilts, is $5\frac{1}{4}$ inches high, and now in the Devizes Museum. Found with the skeleton of a child.

No. 54. from the smaller Cladown barrow, Martinstown, Dorset, is $5\frac{1}{2}$ inches high, and now in the Dorchester Museum.

No. 55. from barrow 27, Winterbourn Stoke Down, Wilts, is 7 inches high, and now in the Devizes Museum.

No. 56. from barrow 116, Goodmanham, E. Riding, is $5\frac{3}{4}$ inches high, and now in the British Museum. The bottom of this beaker is ornamented. (Greenwell, *Brit. Bar.*, 325-6.)

No. 57, from Barnwell, a suburb of Cambridge, is $7\frac{3}{10}$ inches high, and now in the Cambridge Museum.

No. 57a, from Rhosbeirio, Anglesea, is 8 inches high. Found in a cist in a farm-yard. (*Arch. Camb.*, 3 ser., xiv. 271.)

TYPE β .

" β . *Ovoid drinking-cup with recurved rim*.—In this there is no distinct demarcation between the body of the cup and the brim, but the one glides into the other by a gradual curve. The brim is of slight elevation, and in the Wiltshire examples is curved outwards at the lip. The body is oval." (Thurnam, *Archæol.*, vol. 43, p. 392)

Sub-type β 1.

At first the body is rounded, with the greatest swell at about a third of the height of the beaker, and passes with a curve into a curved everted neck. The development takes two directions: (1) the bulge becomes less and less prominent, till the walls are nearly straight and terminate in a very short everted neck, Nos. 58–66. At this point the sub-type touches β 3. (2) The curve below the greatest swell flattens, and develops a well-marked rounded angle. From this point the walls take an inward curve to the lip, Nos. 58–62, 67–77. There are twenty-four examples of this sub-type, of which nineteen are reproduced.

No. 58, from Roundway, Wilts, is $6\frac{1}{4}$ inches high, and now in the Devizes Museum. It was found in an oval grave sunk to a depth of $5\frac{1}{2}$ feet below the surface of the ground, with the skeleton of an old man, a bronze tanged dagger 10 inches long, a stone bracer with a pair of holes at each end; and a flint arrow-head. The white incrustation in the lines composing the ornamentation is very noticeable, and though so common on neolithic pottery on the Continent, is very unusual in Great Britain. (*Wilt's Arch. Mus.*, iii. 185–6; *Archæol.*, vol. 43, figs. 120, 154.)

No. 58a, from Gospel Hillock, Buxton, Derbyshire, is 7 inches high. At the centre of the barrow, probably on the natural surface, was a large stone, on which lay two skeletons, and with one of them was a stone chisel or celt, and several conical beads of Kimmeridge shale with the Y-shaped perforation. Beyond the north-west angle of the stone, apparently a little below the level of the ground, were two skeletons lying on a pavement of stones and protected by a walling of stones, but uncovered. With them was this beaker. (*Reliquary*, viii. 85–7; *Archæol.*, vol. 43, fig. 82.)

No. 58b, from Glanyr Afon, Denbighshire, is 5 inches high. (*Archæol.*, vol. 43, fig. 85.)

No. 59, from near Almer, Sturminster Marshall, Dorset, is $8\frac{1}{4}$ inches high, and now in the Farnham Museum.

No. 60, from Winterslow Hut, Wilts, is $8\frac{1}{2}$ inches high, and now in the Ashmolean Museum. Found under a barrow as a central interment 4 feet below the natural level, with a skeleton of immense size, a stone bracer with three holes at each end, and a tanged knife-dagger $5\frac{3}{8}$ inches long. (*Arch. Journ.*, i. 156-7; *Archæol.*, vol. 43, pl. xxxi, fig. 2.)

No. 61, from Largie, Poltalloch, Argyll, is 9 inches high, and now in the British Museum. Found in a chambered barrow with 4 compartments as a secondary interment, with fragments of two other beakers. (*Proc. S.S.I. Scot.*, vi. 344-5.)

No. 62, from Rotherley, S. Wilts, is $8\frac{1}{2}$ inches high, and now in the Farnham Museum. Found at the foot of a contracted skeleton, the estimated height of which was 5 feet 9½ inches. There was no mark or rise in the ground to show its position. (Pitt Rivers, vol. iii, pl. 92.)

No. 63, from barrow 3, Upton Lovel, Wilts, $6\frac{1}{4}$ inches high, and now in the Devizes Museum. Found in a low barrow with a skeleton.

No. 64, from barrow 161, Normanton, Wilts, is $7\frac{1}{4}$ inches high, and now in the Devizes Museum. Found in a grave nearly 6 feet deep, under a low barrow. At a higher level, and above the grave, a skeleton with another beaker (lost) was also found.

No. 65 from Yarnton, Oxfordshire, is now in the Ashmolean Museum.

No. 66, from barrow 13, Wilsford, Wilts, is $6\frac{1}{2}$ inches high, and now in the Devizes Museum.

No. 67, from barrow 20, Rushmore Park, Wilts, is $8\frac{1}{16}$ inches high, and now in the Farnham Museum. Found under a low barrow at a depth of 3 feet, with a male skeleton of a young man about 5 feet $6\frac{1}{2}$ inches in height, the skull of which was brachycephalous. (Pitt Rivers, ii, p. 26, pl. 77.)

No. 68, from Wor Barrow, Handley Down, Dorset, is $5\frac{1}{4}$ inches high, and now in the Farnham Museum. Found in a circular pit 200 feet S.W. of the centre of the barrow, at a depth of $2\frac{1}{4}$ feet. There was no mound over the grave. With it was a skeleton having a height of 5 feet $4\frac{1}{2}$ inches, the skull of which had a cephalic index of 80.6. (Pitt Rivers, vol. iv, p. 114, pl. 265.)

No. 69, from Dorchester, Dorset, is 7 inches high, and now in possession of Mr Charles Prideaux, Dorchester. The skull of the skeleton was extremely brachycephalous.

No. 70, from Summertown, Oxon., is $7\frac{3}{4}$ inches high, and now in the British Museum.

No. 71, from Somersham, Hunts, is $10\frac{1}{4}$ inches high, and now in the Cambridge Museum.

No. 72, from barrow 235, Willerby, E. Riding, is $4\frac{1}{2}$ inches high, and now in the British Museum. Found as a secondary interment at the centre, with

an adult skeleton. In all probability it is later than 4 slightly flanged axes found 8 feet from the centre and apparently placed there when the barrow was thrown up. (*Archæol.*, vol. 52, pp. 2-4.)

No. 73, from near Pickering, N. Riding, is $7\frac{1}{2}$ inches high, and now in the Sheffield Museum. (Bateman, *Two Years*, p. 231.)

No. 74, from Count Hill, Dalry, Ayrshire, is 9 inches high, and now in the National Museum, Edinburgh. Found under a cairn at the bottom of a central grave. (*Proc. S.A. Scot.* x. 284.)

No. 75, probably from Northumberland, is now in the Newcastle Museum.

No. 76, from Lesmurdie, Banffshire, is $7\frac{1}{2}$ inches, now in the National Museum, Edinburgh. Found in a cist. In two adjacent cists, which are probably contemporary, were found Nos. 132, 143. (*Proc. S.A. Scot.*, i. 206-9.)

No. 76a, from Lintathen, Monifieth, Forfarshire, is 7 inches high. Found in a central cist under a large cairn. With it was a flat bronze knife-dagger $4\frac{1}{2}$ inches long. (Anderson, *Br. and Stone Ages*, figs. 6, 7.)

No. 76b, from cist 3, Eddertoun, Ross, is 6 inches high. Five other cists were found under the cairn, three of which contained burnt bones. (Anderson, *op. cit.*, figs. 110, 111.)

No. 76c, from Auchmore, Pottsoy, Banffshire, is now in the Banff Museum. Most of the upper part is broken off, but the beaker seems to belong to $\beta 1$.

Sub-type $\beta 2$.

At first the body seems to have been rounded, but the greatest swell lies rather lower than in $\beta 1$: it develops in the same way as the second part of $\beta 1$. Nos. 81-83 are from pit dwellings, and show that the beaker type was not made solely for sepulchral usage. There are twelve examples of this sub-type, of which ten are reproduced.

No. 77, from Mere Down, Wilts, is 6 inches high, and now in the Devizes Museum. Found under a low barrow at a depth of $3\frac{1}{2}$ feet, with two skeletons, a small tanged knife-dagger, flat, plain, measuring 5 inches by $1\frac{1}{2}$ inches, a stone bracer with a perforation at each end, two discs of gold leaf, very thin, and rather larger than a shilling, bearing a cross with equal arms and a row of dots round the circumference. (Hoare, *Anc. Wilts.*, i. 44, pl. 11.)

No. 77a, from Boyton, Dean Valley, Wilts, is 9 inches high. Found with a skeleton, at 4 feet below the natural level, under a barrow. (*Archæol.*, xv. 343, pl. xvii.)

No. 78, from Blackbush Down, Cranborne, Dorset, is $7\frac{1}{2}$ inches high, and now in the Farnham Museum.

No. 79, from Aberdeenshire, is $4\frac{3}{4}$ inches high, and now in the National Museum, Edinburgh.

No. 80, from Highstead gravel-pit, Devonshire, is 4 inches high, and now in the Plymouth Museum, as a loan from F. Brent, Esq.

Nos. 81, 82, 83, from Hitcham, near Taplow, Bucks, are 4 inches, $3\frac{1}{10}$ inches, and $4\frac{1}{2}$ inches high respectively, and are now in the British Museum. They were found in removing several circles belonging to pit-dwellings near Taplow. These contained food-vessels, drinking-cups, and cinerary urns; bones of the ox, sheep, pig, etc.; broken pottery, on which were rudely formed patterns; in one vessel was a fragment of a polished axe. (*Maidenhead Natur. Field Club, 8th Annual Report, 1890-1*, p. 46.)

No. 84, from Highstead, Devonshire, is 4 inches high, and now at the Plymouth Museum, on loan from F. Brent, Esq.

No. 85, from Cholsey, Berks, is 6 inches high, and now in the British Museum.

No. 86, from Bailheland, Auchterarder, Perthshire, is $5\frac{3}{4}$ inches high, and now in the National Museum, Edinburgh.

No. 86a, from Plas Heaton, near Denbigh, is 8 inches high. Found in a cist under a barrow, with a skeleton. (*Arch. Camb.*, 3 ser., xiv. 273.)

Sub-type β3.

In this sub-type the body is oval and neck extremely short. As all the examples, with the exception of No. 93, are short, from 4 inches to $5\frac{1}{2}$ inches high, perhaps they are to be regarded as dwarfed forms of beakers of sub-type β1, such as No. 63. Nos. 91, 92 are both later than a food-vessel of the same type as that found with No. 23a; and No. 92 is very likely rather later than a food-vessel of a later sub-type than the above, as it was found at a greater distance from the centre. No. 93 was found in the same barrow as Nos. 123-5, 139. There are seven examples of this sub-type, all of which are reproduced.

No. 87, from Beggar's Heaven, Devil's Dyke, Brighton, Sussex, is 5 inches high, and now in the British Museum. It was found with a necklace of thin bronze-leaf, rolled into small cylinders, and beads of very small perforated discs of lignite.

No. 88, from Brandon Fields, Suffolk, is $3\frac{3}{4}$ inches high, and now in the British Museum. This small beaker, a food-vessel not unlike a beaker, and a stone bracer with three perforations at each end, were found together in a bed of drift, extensively worked for flints, on the banks of the Little Ouse. There was no tumulus, and no bones accompanied the vessels. (*Proc. Soc. Ant. of London*, 2 ser., v. 271-2.)

No. 89, from between Methwold and Fellwell, Norfolk, is $5\frac{1}{2}$ inches high, and now in the British Museum.

No. 90, from Yarnton, Oxford, is $4\frac{1}{2}$ inches high, and now in the British Museum.

No. 91, from barrow 67, Rudstone, E. Riding, is $4\frac{7}{8}$ inches high, and now in the British Museum. It was found about 12 feet from the original centre.

No. 92, from barrow 67, Rudstone, E. Riding, is $4\frac{1}{4}$ inches high, and now in the British Museum. Found about 21 feet from the original centre. (*Brit. Burrows*, pp. 259, 261.)

No. 93, from barrow 62, Rudstone, E. Riding, is $6\frac{3}{4}$ inches high, and now in the British Museum. At the centre of the barrow, a circular cutting 9 feet in diameter had been made subsequent to the erection of the mound. Towards the centre of the cutting, just above the natural level, and resting on a bed of charcoal, was the body of a young woman and No. 139. A little further from the centre, and all but resting on the charcoal, was the body probably of a woman, with No. 93, a flint knife, 2 flint chips, and 2 bronze awls. These two beakers may therefore be regarded as contemporary. At 4 feet from the centre, and 4 feet above the natural level, was a skeleton interment, accompanied by a food-vessel of quite a different type from those hitherto mentioned, but one that is fairly common in Scotland, and very abundant in Ireland. From the level at which it was found it must be somewhat later than Nos. 93, 139. (*Brit. Bur.*, pp. 236-7.)

Sub-type $\beta 4$.

In this sub-type the body is oval and passes with a curve into the neck, which is short and everted. The development took two directions. (1) The neck shortens, while the body retains its oval form—Nos. 94, 95, 97, 103-110; (2) the position of the greatest constriction becomes lower—Nos. 96, 98-102—and some examples approximate $\beta 1$, such as No. 74, but without becoming so angular; No. 106 is much like Nos. 87, 88 of $\beta 3$, but I have placed it in $\beta 4$ on account of the great geographical distance that separates the places where they are found, and the want of intervening links in the chain of beakers. Whether Nos. 107-110 really belong to this sub-type is very uncertain: some perhaps belong to the end of $\gamma 2$. There are twenty examples of this sub-type, of which seventeen are reproduced.

No. 94, from Culbone, Exmoor, Somerset, is $6\frac{1}{4}$ inches high, and now in the Taunton Museum. Found, with a brachycephalous skeleton, at a depth of 5 feet below the natural surface. (*Somerset Arch. Proc.*, xli. 60-65.)

No. 95, from Chagford Common, Exmoor, Devon, is $9\frac{1}{4}$ inches high, and now in the Plymouth Museum.

No. 96, from Lambourn Down, Berks, is $5\frac{3}{4}$ inches high, and now in the British Museum.

No. 97, from Clifton, Penrith, Westmorland, is 7 inches high, and now in the Carlisle Museum.

Nos. 98, 99, from barrow 99, Goodmanham, E. Riding, are $5\frac{3}{4}$ inches and $6\frac{7}{8}$ inches high respectively, and are now in the British Museum. At the bottom of a large grave at the centre was the body of a young woman, and near her face lay No. 98. This interment seemed to have been disturbed by the introduction of a child's body; close to its face was No. 115. About 2 feet north of the woman's head lay No. 99. All three beakers are no doubt practically contemporary. Greenwell, *Brit. Bar.*, pp. 308-9.

No. 99a, from barrow 245, Folkton, E. Riding, is $8\frac{1}{2}$ inches high. (*Archæol.*, vol. 52, p. 16.)

No. 100, from Alwinton, Northumberland, is $7\frac{1}{2}$ inches high, and now in the British Museum.

No. 101, from East Barns, E. Lothian, is $7\frac{1}{4}$ inches high, and now in the National Museum, Edinburgh.

No. 101a, from Tents Moor, Lenchars, Fife, is 5 inches high. (*Proc. S.A. Scot.*, xvii, 384-5.)

No. 102, from Gardenstown, Banffshire, is $6\frac{3}{4}$ inches high, and now in the Collection of Mr Young, Tortola, Nairn. (*Reliquary*, new series, ii, 178.)

No. 103, from Dunrobin Park, Sutherland, is 7 inches high, and now in the Dunrobin Castle Museum. Found with the skeleton of a young woman with a brachycephalous skull, having a cephalic index of 82.4; 18 quartzose, beach-rolled pebbles; 118 small shale discs about the size and thickness of a three-penny bit, of which six were perforated. (Letter from the Rev. J. M. Joass, LL.D., Golspie, Curator of the Dunrobin Museum.)

No. 103a, from Corran Ferry, Inverness-shire, is $5\frac{1}{2}$ inches high. Found in a cist at $4\frac{1}{2}$ feet below the natural surface. The roof was formed of two inclined stones, sloping like rafters. The floor of the cist was formed by the natural gravelly soil. (*Proc. S.A. Scot.*, xxiv, 437.)

No. 104, from Gordonstone, Elgin, is $6\frac{1}{4}$ inches high, and now in the Elgin Museum.

No. 105, from the Faury Knowe, Pendreich, Bridge of Allan, Stirlingshire. This tumulus was 21 feet high, and had a diameter of 78 feet. The beaker was found embedded in the earth at a depth of about 2 feet from the summit of the mound. At the centre of the tumulus, on the natural level of the ground, there was a cist, constructed with flat stones set on edge and partly with dry masonry. It was somewhat circular in form and 3 feet deep. The bottom of the cist for a depth of 6 inches was covered with fatty black earth, mixed with charcoal and small bits of human bone. (*Proc. S.A. Scot.*, vii, 519-21.)

No. 106, from Cambusmore, Dornoch, Sutherland, is $5\frac{1}{2}$ inches high, and now in the Dunrobin Museum. Found in a cist in a gravel-bank. (Letter from Rev. J. M. Joass, LL.D., Golspie.)

No. 107, from Cullen, Banffshire, is 5 inches high, and now in the Banff Museum.

No. 108, from Slap, Turriff, Aberdeenshire, is 6 inches high, and now in the National Museum, Edinburgh. Found with flint flakes. (*Proc. S.A. Scot.*, x, 749.)

No. 109, from Aberdeenshire, is $4\frac{3}{8}$ inches high, and now in the British Museum.

No. 110, from Grynlan, Norham, Northumberland, is $5\frac{1}{8}$ inches high, and now in the National Museum, Edinburgh.

TYPE γ .

This type is described by Dr Thurnam as the 'low-brimmed cup,' and was regarded by him as a debased variety of type *a*.

Sub-type $\gamma 1$.

This sub-type seems to be derived from a form like No. 47, which belongs to the East Coast, by a reduction of the length of the neck. The body was originally oval or ovoid, the neck short, and the junction between this and the body was abrupt and well marked. By degrees the lower part of the body flattens and a rounded shoulder develops—Nos. 121, 122. At this point it approaches some forms of $\gamma 4$, such as Nos. 161 to 163. No. 113 is out of place, and goes with No. 122a quite at the end of the series. No. 116 is abnormal, but is contemporary with No. 117. There are seventeen examples of this type, of which twelve are reproduced.

No. 111, from Hawkfield, Lesbury, Northumberland, is $9\frac{1}{4}$ inches high, and now in the Newcastle Museum. Found with No. 127a.

No. 111a, from Whitehouse, Alnwick, is 9 inches high, and now in the Alnwick Castle Museum. (*Catal. of Aln. Cast. Mus.*, pl. xi.)

No. 112, from Sacriston, Durham, is $6\frac{3}{4}$ inches high, and now in possession of Canon Greenwell, of Durham. Found in a cist with the unburnt body of an adult.

No. 113, from Norham, Northumberland, is 7 inches high, and now in the British Museum.

No. 114, from barrow 66, Rudstone, E. Riding, is $7\frac{1}{4}$ inches high, and now in the British Museum. It was found in a grave underlying a skeleton interment with No. 32.

No. 115, from barrow 99, Goodmanham, E. Riding, is 8 inches high, and now in the British Museum. Found with Nos. 98, 99.

No. 115a, from Northumberland, is $8\frac{1}{2}$ inches high, and now in the Alnwick Castle Museum. (*Catal. Aln. Cast. Mus.*, pl. xii.)

No. 116, from North Sunderland, Northumberland, is 8 inches high, and now in the collection of Canon Greenwell, of Durham. Found, with the unburnt body of a girl of nine years old, with No. 117.

No. 117, from North Sunderland, Northumberland, is 5 inches high, and now in the collection of Canon Greenwell, of Durham.

No. 118, from Bellingham, Northumberland, is 6½ inches high, and now in the British Museum.

No. 119, from Nether Moor, Hunsonby, Cumberland, is 8½ inches high, and now in the Carlisle Museum.

No. 120, from Clifton, Penrith, Westmorland, is 7¾ inches high, and now in the Carlisle Museum.

No. 120a, from Mawksmill, Gordon, Berwickshire, is 9 inches high. Found in a sand-pit, lying on its side. (*Berwick, Nat. Club.* (1855-6), p. 194; and *Proc. S.S.L. Scot.*, xx. 100, fig. 2.)

No. 121, from Lanark Moor, Lanarkshire, is 6¼ inches high, and now in the National Museum, Edinburgh. It was found with another beaker very much like No. 101 in outline, but more slender.

No. 122, from Ord, Auchindoir, Aberdeenshire, is 7½ inches high, and now in possession of Professor Reid, Aberdeen. The white inlay is very apparent, and is found all over the vessel.

No. 122a, from barrow 197, Bamborough, Northumberland, is 5½ inches high, and now in the British Museum. Found in a cist 2 feet below the natural surface, the cover being level with the ground. Inverted over this capstone lay a large cinerary urn, of unusual form and unique ornamentation, apparently of a late epoch. Although this beaker is a late one, there is no reason to suppose that it is contemporary with the cinerary urn. (*Brit. Bur.*, pp. 415-16.)

No. 122b, from Carlisle, is 6 inches high, and now in the Carlisle Museum.

Sub-type γ2.

This sub-type seems to be a derivative of β4. Nos. 123-5 are from the same grave, and no doubt contemporary. So at the beginning of the series we find two varieties: (1) a more slender form of body, passing with a curve into a short neck; (2) a stouter body, where the curve at the base of the straight neck almost disappears. Though some of the forms of this sub-type closely resemble others from γ1, yet their descent from a β sub-type is recognisable by the passage from the body to the neck, which is always softened by a slight curvature. Towards the end of the series the walls flatten, and the original type-form is less and less distin-

guishable, so that the place of the final beakers is quite uncertain. There are twenty-three examples of this sub-type, of which sixteen are reproduced.

Nos. 123, 124, 125, from barrow 62, Rudstone, E. Riding, are $7\frac{3}{4}$ inches, $7\frac{3}{4}$ inches, and $8\frac{1}{2}$ inches high respectively, and now in the British Museum. At the centre of the barrow was a circular grave, 9 feet in diameter and $10\frac{1}{2}$ feet deep, at the bottom of which were two cists composed of slabs. In the northerly cist was the body of an old man, and at his feet the bodies of two very young children, together with No. 124. At the centre of the other cist was a deposit of burnt bones, chiefly of a male adult, and in one corner lay No. 125. Between the east side of the grave and the side of the first cist lay the burnt body of a strong male adult and No. 123. These interments seem to have disturbed a previous one, as fragmentary bones of two persons lay outside the second cist, and fragments of a beaker were noticed in the filling in of the grave. At a much higher level, as later interments, were found Nos. 93, 139. (*Brit. Bar.*, pp. 238-241.)

No. 126, from Clifton, Penrith, Westmorland, is now in the Ashmolean Museum.

No. 127, from barrow 7, Sherburn, E. Riding, is $8\frac{1}{2}$ inches high, and now in the British Museum. Found close to the north-west edge of a barrow with a diameter of 60 feet. The body lay on the natural surface and was that of a young person. (*Brit. Bar.*, p. 146.)

No. 127a, from Lesbury, Northumberland, is 5 inches high, and now in the Alnwick Cast. Museum. Found with No. 111. (*Catal. Aln. Cast. Mus.*, pl. xii.)

No. 128, from Turret Burn, North Tordale, Northumberland, is now in the Newcastle Museum.

No. 129, from barrow 42, Weaverthorpe, E. Riding, is $7\frac{1}{4}$ inches high, and now in the British Museum. Found at the centre, on the natural surface, as a secondary interment, having disturbed two or three previously buried bodies. (*Brit. Bar.*, p. 193.)

No. 130, from barrow 61, Rudstone, E. Riding, is $7\frac{1}{2}$ inches high, and now in the British Museum. Found with the body of probably a woman of about thirty years of age. (*Brit. Bar.*, p. 231.)

No. 131, from Collessie, Fife, is 9 inches high, and now in the National Museum, Edinburgh. Found in a stone cist on the natural surface, nearly at the centre of a large cairn about 120 feet in diameter and about 14 feet high. About 12 feet from the centre was an oval pit 6 feet deep, at the bottom of which lay No. 142 in fragments. About 25 feet from the centre was another hole 4 feet deep, containing fragments of burnt human bones. Among these lay a thin triangular knife-dagger 6 inches long, and near it the gold mounting of the handle. (Anderson, *Br. and Stone Ages*, figs. 4, 5.)

No. 132, from Lesmurdie, Banffshire, is $7\frac{1}{4}$ inches high, and now in the National Museum, Edinburgh. Found in a cist with a skeleton interment; the skull was platycephalic, and had a cephalic index of 85. Two adjacent cists contained Nos. 76 and 143, so they may be regarded as contemporary.

No. 133, from Aberdeenshire, is $6\frac{1}{2}$ inches high, and now in the National Museum, Edinburgh.

No. 133 a, b, from Balbridie, Durris, Aberdeenshire. There are two photographs of these beakers in the Marischal Coll. Museum, Aberdeen, which perhaps belong to the series, but the photographs I have are too small and indistinct to be sure on this point.

No. 133c, from Brougham, Penrith, Westmorland, is $3\frac{3}{4}$ inches high. Said to have been found with a food-vessel which was in fragments. (*Archæol.*, vol. 45, p. 414.)

No. 133d, from King's Wells, Fallaws, Monikie, Forfarshire, is 8 inches high, and now in the National Museum, Edinburgh. Found in a cist with flint implements and a rubbing-stone. (*Proc. S.A. Scot.*, x. 26.)

No. 134, from near Aberdeen, is 8 inches high, and now in the Collection of Mr Young, Tortola, Nairn. Found in a cist with burnt bones.

No. 134a, from Noranside, Fern, Forfarshire, is $8\frac{1}{4}$ inches high. (*Proc. S.A. Scot.*, xxvii. 66.)

No. 135, from Windy Mawr, Hunnibie, E. Lothian, is $6\frac{1}{2}$ inches high and now in the National Museum, Edinburgh. Found in a cist in digging for sand. (*Proc. S.A. Scot.*, iii. 51.)

No. 136, from Bankhead, Pitsligo, Aberdeenshire, is $4\frac{3}{4}$ inches high, and now in the Peterhead Museum.

No. 137, from near Elgin, is $6\frac{3}{4}$ inches high, and now in the National Museum, Edinburgh.

No. 137a, from Tartraven, Linlithgow, is $5\frac{1}{2}$ inches high, and now in the National Museum, Edinburgh.

No. 138, from Sleepie's Hill, Urquhart, Elginshire, is $5\frac{3}{4}$ inches high, and now in the Elgin Museum.

Sub-type γ3.

To judge from its proportions, this sub-type is derived from an East Coast form like Nos. 44, 45, of α5. At first the neck is only a little shorter than the body: the body is well rounded and the constriction is very strongly marked. By degrees the lower part of the body flattens and the body lengthens at the expense of the neck, which becomes shorter. Although the angle between the neck and body in No. 143 seems much blunted on its left side, if the vessel is turned a little to the right the angle is seen very clearly. Whether No. 148 belongs to this series is uncertain. There are fourteen examples of this sub-type, of which ten are reproduced.

No. 139, from barrow 62, Rudstone, E. Riding, is 6 inches high, and now in the British Museum. It was found in the same barrow as No. 93. At a greatly lower level were found Nos. 123-5.

No. 140, from Broomend, Inverurie, Aberdeenshire, is 6 inches high, and now in the National Museum, Edinburgh. It was found in the same cist as No. 38.

No. 141, from Crawford, Lanarkshire, is 6 inches high, and now in the National Museum, Edinburgh. Found in a central cist under a cairn, with a bronze ring 3 inches in diameter. (Anderson, *Br. and Stone Ages*, figs. 64, 65.)

No. 142, from Collesie, Fife, is 7 inches high, and now in the National Museum, Edinburgh. It was found in the same cairn as No. 131.

No. 143, from Lesmurdie, Banffshire, is $5\frac{3}{4}$ inches high, and now in the National Museum, Edinburgh. It was found in a cist adjacent to two others containing Nos. 76 and 132. (*Proc. S.A. Scot.*, i. 296-9.)

No. 143a, from Kirkbuddo, Forfarshire, is 4 inches high. Figured by Thurnam in *Archæologia*, vol. 43, pl. 31, fig. 6.

No. 143 b, c, from Hoprig farm, Cockburnspath, Berwickshire. Found in the same cist under a barrow. (*Berwick Nat. Club* (1887-9), pp. 131-6.)

No. 144, from Fyrish, Evanton, Ross-shire, is 6 inches high, and now in the National Museum, Edinburgh. Found in a cist with a brachycephalous skeleton and a brace of flintstone $4\frac{1}{2}$ inches long, with a pair of holes at each end. (*Proc. S.A. Scot.*, vi. 233; *Br. and Stone Ages*, fig. 12.)

Nos. 145, 146, from Ellon, Aberdeenshire, are $4\frac{1}{2}$ inches and $5\frac{1}{2}$ inches high respectively, and now in the National Museum, Edinburgh. Perhaps they were found with four flint arrow-heads. (*Proc. S.A. Scot.*, xxvi. 262.)

No. 147, from Callachally, Glenforsa, Mull, is $6\frac{1}{2}$ inches high, and now in the National Museum, Edinburgh. Found with fragments of a bronze blade, and a brace of greenstone, with a perforation at each end. (*Proc. S.A. Scot.*, ix. 537.)

No. 147a, from near Kincardine Castle, Perthshire, is 5 inches high. Found in a cist with a burnt body. (*Proc. S.A. Scot.*, xii. 682.)

No. 148, from Ross-shire probably, is $5\frac{1}{4}$ inches high, and now in the National Museum, Edinburgh.

Sub-type γ4.

This sub-type is perhaps derived from a form like No. 41 of *α4* by shortening the neck. It begins with a well-rounded body and a relatively longish everted neck. By degrees the body lengthens at the expense of the neck, and its curves tend to flatten at both ends. The greatest curvature then lies about the centre of the body. Whether Nos. 157, 161-3 belong to the series is uncertain, as the greatest diameters lie rather

too high. With the exception of No. 150a, the position of which here is doubtful, all examples of this sub-type seem confined to the counties of Forfar, Aberdeen, Banff, Elgin and Nairn. There are twenty examples of this sub-type, of which sixteen are reproduced.

No. 149, from Cruden, Aberdeenshire, is $6\frac{1}{2}$ inches high, and now in the National Museum, Edinburgh.

No. 150, from Priest-town, Edzell, Forfarshire, is now in the National Museum, Edinburgh.

No. 150a, from Castle Cartock, Cumberland, is $7\frac{1}{2}$ inches high, and now in the British Museum. Found in a cist while ploughing. (*Brit. Mus.*, p. 379.)

No. 151, from Leslie, Aberdeenshire, is 8 inches high, and now in the Collection of Mr Young, Tortola, Nairn. Found in a cist, over which there never had been a mound, with the skeleton of a very tall man, and two or three arrow-heads. (*The Reliquary*, new series, iii. 49.)

No. 152, from Carme, Huntly, Aberdeenshire, is 5 inches high, and now in the Elgin Museum.

No. 153, from Persley Quarry, Aberdeen, is $6\frac{1}{2}$ inches high, and now in the Marschal Coll. Museum.

No. 154, from the parish of Nairn, is 7 inches high, and now in the Collection of Mr Young, Tortola, Nairn.

No. 154a, from Broomend, Inverurie, Aberdeenshire, is $6\frac{1}{2}$ inches high. Found in a cist with the skeleton of a large tall man and a female child. In the beaker there was a horn spoon. (*Proc. S.A. Scot.*, vii. 115-7.)

No. 154b, from Parkhill, Aberdeen, is $6\frac{1}{4}$ inches high, and now in the National Museum, Edinburgh. Found in a cist under a mound at a depth of 2 feet below the surface with a skeleton and the bone of a boar. (*Proc. S.A. Scot.*, xvi. 70.) Figured in the catalogue of the Museum.

No. 155, from King's Road, Aberdeen, is 8 inches high, and now in the National Museum, Edinburgh.

No. 156, from Buckie, Banffshire, is $7\frac{1}{2}$ inches high, and now in the Collection of Mr Young, Tortola, Nairn. Found in a cist in a field at some depth below the surface. No trace of a mound. In one corner of the cist were burnt human bones and a quantity of charcoal. In the same field similar graves have been found from time to time. Two or three at least contained not only urns but flint implements and arrow-heads. (*The Reliquary*, new series, i. 249.)

No. 157, from Aberdeenshire, is $7\frac{1}{4}$ inches high, and now in the British Museum.

No. 158, from Carestown, Deskford, Banffshire, is 8 inches high, and now in the Banff Museum.

No. 159, from Ardhifney, Cruden, Aberdeenshire, is now in the Peterhead Museum. It was found with No. 164 bis. (*Wilson, Prehist. Annals*, i. 157.)

No. 160, from Stoneywood, Aberdeen, is $5\frac{1}{4}$ inches high, and now in the Marischal Coll. Museum.

No. 161, from Acres, Knockando, Elgin, is $5\frac{1}{2}$ inches high, and now in the Elgin Museum.

No. 161a, from Freefield, Aberdeenshire, is 7 inches high. Found 5 feet above the natural surface on the north side of a cairn 15 feet high and 60 feet in diameter. The beaker stood on a stone under an alcove of clay. At the centre under a pile of stones 4 feet high and 5 feet in diameter was found a rusty bit of iron like a chisel, but this must have been a very much later deposit. (*P.S.A.S.* xv. 193.)

No. 162, from Parkhill, Aberdeen, is $7\frac{1}{2}$ inches high, and now in the Marischal Coll. Museum. When found it was covered with a brown ox-hide.

No. 163, from Kintery, Kinellar, Aberdeenshire, is 7½ inches high, and now in the Marischal Coll. Museum. Found in a cist with flint arrow-heads, a small flint borer, and charred wood. With them was a large fragment of a bone ring in shape like a napkin-ring, with three deep grooves round it, and one perforated stop in the central groove. The arrow-heads and borer were retained by the donor, and are not now in the Museum.

No. 164, from Tullychoe, Kinross-shire, is $5\frac{1}{4}$ inches high, and now in the National Museum, Edinburgh.

Sub-type γ5.

This sub-type is a bifurcation from γ4. Nos. 159, 164 were found in the same cist, but the two forms lead in different directions. In this sub-type the body is sub-angular and tends to become more and more angular; the neck is short and everted. Nos. 166, 167 both came from a cist on the top of Caikmair Hill, Midlothian, though whether from the same cist is not recorded. At any rate they are not far removed from each other in time, for as No. 166 is closely allied in form to No. 121 of γ1 and might be placed next it, the latter part of γ1 must be contemporary or nearly so with the beginning of γ5. No. 166 is placed where it is to show more clearly the connection between the two sub-types. There are ten examples of this sub-type, of which eight are reproduced.

No. 164 bis, from Ardulney, Cruden, Aberdeenshire, is $5\frac{1}{4}$ inches high, and now in the Peterhead Museum. Found in a small tumulus with No. 159, a bracer of polished flint-stone, with two perforations at each end; a finely polished axe of grey flint $6\frac{1}{2}$ inches long; a necklace of twelve jet beads and four unshaped of amber; a flint arrow-head with barbs and stem. (*Cat. Arch. Exhib. Edin.*, 1858, pl. iii.; Wilson, *Prehist. Annals*, i. 157.)

No. 165, from Cursed Field, Windmill Hill, Ancroft, Northumberland, is $6\frac{3}{4}$ inches high, and now in the Collection of Canon Greenwell, of Durham. Found with the skeleton of a male adult.

Nos. 166, 167, from Cairnmuir Hill, Borthwick, Mid-Lothian, are $6\frac{3}{4}$ and $7\frac{1}{2}$ inches high respectively, and now in the National Museum, Edinburgh. Whether they were found in the same cist is uncertain. (*Proc. S.A. Scot.*, ii. 482.)

No. 168, from Inveramsay, Chapel of Garioch, Aberdeenshire, is $7\frac{1}{2}$ inches high, and now in the National Museum, Edinburgh. (*Proc. S.A. Scot.*, iv. 165.)

No. 168a, from Buckie, Banffshire, is 7 inches high, and now in the National Museum, Edinburgh. Found in a cist about 2 feet below the surface with a skeleton. (*Proc. S.A. Scot.*, xvi. 414.) Figured in the catalogue of the Museum.

No. 169, from Achroisk, Boharm, Banffshire, is 6 inches high, and now in the National Museum, Edinburgh. Found with a skeleton in a cist 4 feet below the surface of a sand-knoll. (*Proc. S.A. Scot.*, viii. 381.)

No. 169a, from Clachfarquhar, Banchoy, Aberdeenshire, is $6\frac{1}{4}$ inches high, and now in the Free Church College, Aberdeen.

No. 170, from Cawdor Castle, Nairn, is $6\frac{1}{2}$ inches high, and now in the British Museum.

No. 171, from Savock, Longside, Aberdeenshire, is now in the Peterhead Museum.

The 222 beakers classified in the preceding pages do not exhaust the total number that have been brought to light. Mr Mortimer of Driffield has a good many in his collection which I have not noticed, as he has a book in the press in which the excavations he has made in the East Riding during the last thirty or forty years will be fully described and illustrated. There are a few more in private collections or in small local museums of which I only know the type or of which I have never heard. According to Thurnam, thirty-six beakers were found in Wilts by Hoare and Cunnington, of which only nine are preserved. Of those discovered in the counties of Derby and Stafford by Mr Bateman about sixteen were too fragmentary to restore, and are consequently lost. During the last hundred years a good many casual finds of beakers must have been made of which there is no record, or no more than that the vessel was in fragments and these thrown away. In Ireland there are in the Dublin Museum fragments from Moytura, Sligo, of two or three

beakers of type β . What seems to be a late beaker of the same type from Mount Stewart, Co. Down, has been figured in the *Dublin Penny Journal* (1832, i. 108), but Mr George Coffey will not allow it to pass muster, and at any rate it is very doubtful.

Diagram I. The classification of the beaker-class here proposed can be focussed in a diagram, which shows at a glance how it works out and the inferences that follow from it. In the preceding pages mention has been made of beakers of different type being found together, and being therefore contemporary. Taking advantage of these helps, it is possible to synchronise, at one or more points in their course, nearly all the fifteen sub-types. The next thing to make sure of is, that the sequences are in the right direction. No one will, I think, maintain that the sequence $\alpha 1, 2, 6$ is in the opposite direction and to be reversed, for here we have the flint daggers to fall back upon as evidence to the contrary. If it is true of type α that the evolution on the whole is retrograde, from good to bad, and from bad to worse, we are entitled to believe that the same principle holds good for types β, γ . Hence a difficulty arises in placing the terminal beakers in most of the sub-types. Towards the close of the beaker period the form had degenerated to such an extent, and we have such ill-shaped, misbegotten examples to deal with, that it is impossible to assign them with certainty to this or that sub-type. Yet, from a practical, chronological point of view, this is of less importance, as they all belong to the close of the period.

Diagram I. is drawn to scale, a $\frac{1}{12}$ of an inch being allowed for each beaker, so that the length of each line is proportionate to the number of examples in each sub-type.

If every beaker made in the country had been preserved, was then arranged correctly in fifteen sub-types and drawn to scale in the same way as the diagram, then the length of a line AB drawn between the extremities would represent graphically the length of life of the beaker-class with absolute accuracy. If we also knew exactly what this line represented in terms of years, by dividing AB into spaces of fifty years each and drawing horizontal lines through the points, all the beakers between each

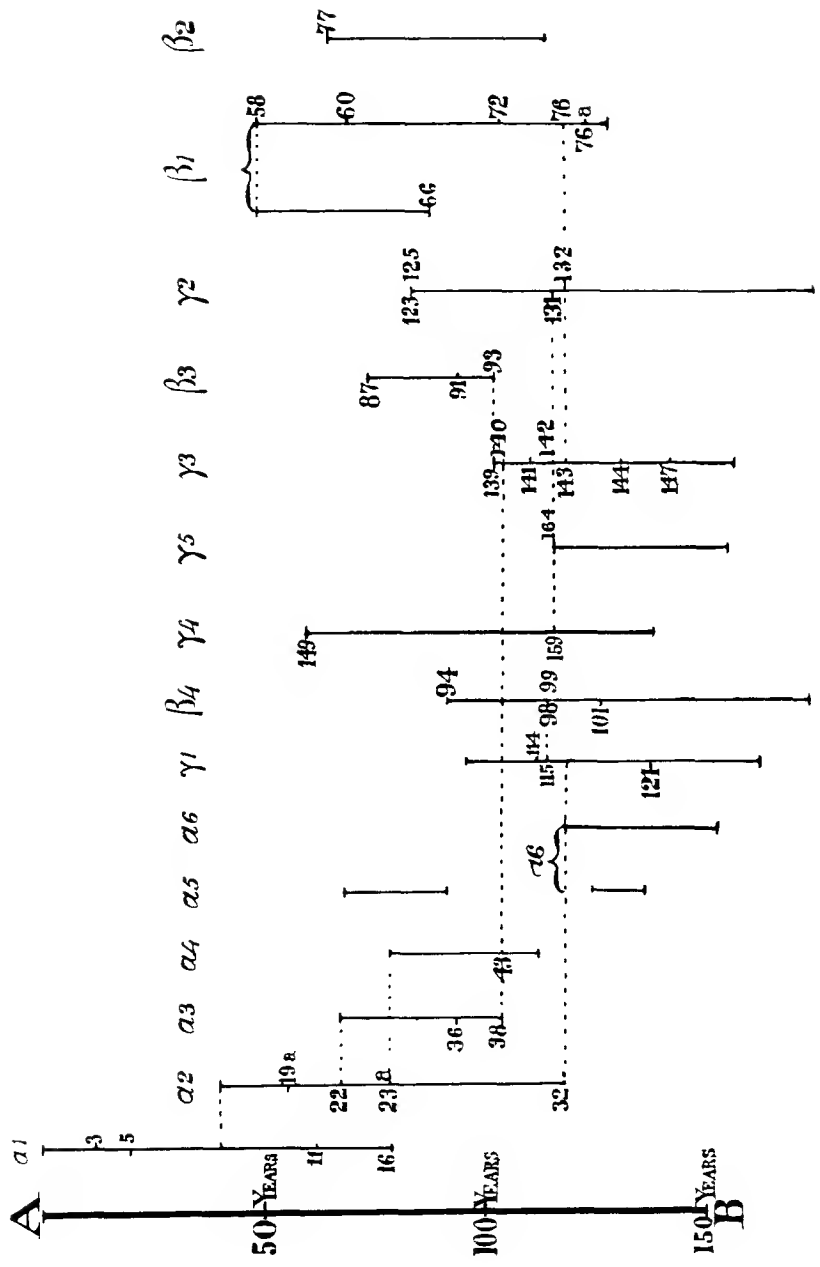
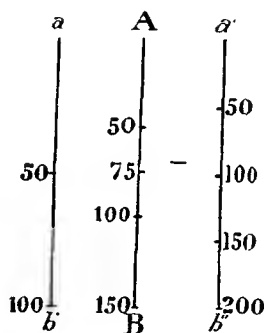


Diagram 1.

space would belong to a definite time with absolute certainty. There would be no error. So too if, in default of having all the beakers, we have only a proportion of them, so long as that proportion was the same in each sub-type, the new line $A' B'$ would be as true as $A B$: it would only be proportionally shorter. But a source of error would creep in if the number of years represented by $A B$ or $A' B'$ was unknown and had to be estimated. The error might be either on the side of excess or of deficiency of years, and can easily be visualised on a small diagram. For instance, if $A B$ is estimated at 150 years, it might be 50 years over or under the truth. Let $A B$ represent a line estimated to cover 150



years and divide it into 3 spaces of 50 years each. Let $a' b'$ represent a true space of 100 years, and divide it into 2 equal spaces. Let $a'' b''$ represent a true space of 200 years, and divide it into 4 equal spaces. If $A B$ is underestimated by 50 years, the beakers on each side of the 50-year point will be underestimated by about 17 years; on each side of the 75-year point they will be 25 years less than the true time; at the 100-year point they will be about 35 years short and at the 150-year point will be 50 years short of the true time. On the other hand, if $A B$ is overestimated by 50 years, the beakers on each side of the 50-year point are 17 years in excess of the true time; at the 75-year point they are 25 years in excess, and at the 150-year point are 50 years out of reckoning. From this diagram it is evident

that the full force of the error does not take effect till the close of the series, and that for the first half of it the progressive error can never be more than ± 25 years, or less than a generation—no great miscalculation in an investigation of this sort.

In diagram I. the lines that represent the lengths of the sub-types are necessarily drawn on the assumption that each is equally well represented and bears the same proportion to those that are lost or missing. This postulate is not likely to be perfectly accurate, though I think there is a considerable probability that the difference in proportion between them is not very great, and not likely to cause any outrageous error. Although they were separated for convenience, *a1*, *2*, *6*, form a single sequence, and can be treated as unity. The line A B, therefore, between the beginning of *a1*, and the end *a6*, represents the length of time that type *a* existed in Britain. I estimate it at 150 years, or five generations, though for all I know this length of time might be doubled.

Construction of Diagram I.

a1.—This line is a perpendicular 20 units long, each unit being $\frac{1}{12}$ of an inch, as the series consists of 20 members.

a2.—As this sub-type branches off about the middle of *a1*, a line of 20 units, there being 20 examples, is drawn parallel to *a1* at 10 units from its starting-point.

a3.—This sub-type bifurcates from *a2* at No. 22. Its line is drawn parallel to *a2* with a length of 9 units.

a4.—This sub-type diverges from *a2* about its centre. Its line is drawn parallel to it with a length of 8 units.

a5.—There is nothing to fix the exact position of this sub-type. Provisionally it is drawn to begin at the centre of *a2* with a length of 7 units.

a6.—This sub-type is a prolongation of *a2* and of *a5*. A line of 8 units in length is drawn parallel to *a2*, beginning where the latter terminates; another of 3 units is drawn in prolongation of *a5*, allowing a gap of 4 units, but the length of this interval cannot be determined at present.

The line A B has a length of 39 units. Estimating this at 150 years, the space between each unit of length is equal to 3·84 years, or 13 units to 50 years.

γ1.—The general position of this sub-type is found as follows. No. 32 of *a2* was found immediately over a grave containing No. 114 of *γ1*. No doubt they are practically contemporary, though not deposited in the same year. I allow 2 units, or about 7 years' interval. From 32 on line *a2* draw a hori-

zontal line and set up in both directions a perpendicular $\gamma 1$. At 2 units above the intersection, place 114. The line $\gamma 1$ begins 3 units higher up, and has a length of 17 units.

$\beta 4$.—No. 115 of $\gamma 1$ was found with Nos. 98, 99 of $\beta 4$. From 115 draw a horizontal line, and set up in both directions the perpendicular $\beta 4$, marking 98, 99 at the intersection. This line begins 5 units higher up, and has a length of 20 units.

$\gamma 3$.—No. 38 of $\alpha 3$ was found with No. 140 of $\gamma 3$. From 38 draw a horizontal line, and set up in each direction a perpendicular $\gamma 3$. It begins 1 unit higher up, with 139, and is 14 units long.

$\beta 3$.—No. 139 of $\gamma 3$ and No. 93 of $\beta 3$ must be practically contemporary. From 139 draw a horizontal line, and set up a perpendicular $\beta 3$ with a length of 7 units, marking 93 at the intersection.

$\gamma 2$.—No. 142 of $\gamma 3$ is contemporary with No. 131 of $\gamma 2$, and No. 143 is practically if not exactly contemporary with No. 132 of $\gamma 2$. From 142, 143 on the line $\gamma 3$ draw two horizontal lines, and set up in both directions the perpendicular $\gamma 2$. Mark off the points 131, 132 at the intersections. The line $\gamma 3$ begins 8 units above 131, and has a length of 23 units.

$\beta 1$.—No. 132 of $\gamma 2$ is practically, if not precisely, contemporary with No. 76 of $\beta 1$. From 132 draw a horizontal line, and set up a perpendicular $\beta 1$ in both directions, marking 76 at the intersection. It begins 18 units higher up with No. 58. As sub-type $\beta 1$ develops in two directions, a line 10 units long must be drawn parallel to it, terminating with No. 66.

$\gamma 5$.—Nos. 142 of $\gamma 3$ and 164 of $\gamma 5$ are very similar in form and belong to the same series, but develop in different directions. From 142 draw a horizontal line, and let fall a perpendicular $\gamma 5$, 10 units long, from the point of intersection 164.

$\gamma 4$.—No. 164 of $\gamma 5$ was found with No. 159 of $\gamma 4$. From 164 draw a horizontal line, and set up in both directions a perpendicular line $\gamma 4$ at the point of intersection 159. The line begins 14 units higher up with No. 149, and has a length of 20 units.

$\beta 2$.—The position of this sub-type cannot be exactly determined. Provisionally its beginning has been placed 4 units later than No. 58 of $\beta 1$. Its length is 12 units.

The above construction shows the typological classification of the beaker class of ceramic when laid down on paper in as mechanical a manner as possible, so as to preclude fudging or insidious adjustment of any kind. The system is, I believe, a perfectly sound one, though in carrying it out no doubt there are errors. Some beakers are probably, perhaps certainly, misplaced. But these are errors of detail, which do not affect the fact that this ceramic has developed in an orderly way,

following an unconscious law from the beginning to the end of the series.

The diagrammatic results must now be tested to see where they are strong and where weak. The position of $\beta 4$ is fixed by $\gamma 1$. Now 121 of $\gamma 1$ was found with a beaker extremely like 101 of $\beta 4$, though more slender, so that they must be practically contemporary. Though 121 on line $\gamma 1$ and 101 on line $\beta 4$ were laid down quite mechanically and independently, the difference of time between them is represented by a little over two units, or about eight years. In describing sub-type $\beta 1$ it was observed that No. 66 touched $\beta 3$, and that would be between 90 and 91. Though the lines $\beta 1$, $\beta 3$ are arrived at quite independently, and 91 and 66 are fixed mechanically, the difference of time between them is only seven years. It must be observed, too, that the line $\beta 1$ is fixed by No. 76, almost the last of the series. And though we have to carry the line back to No. 58, a space of seventy years, and then begin again to reach 66, the difference of time between this and 91 is only seven years. So too 131, 132 on $\gamma 2$ follow naturally, just as 142, 143 on line $\gamma 3$, though here the difference in time is probably more than a unit. These unexpected coincidences show that the whole scheme of classification is not erroneous, and that the sequences in these particular sub-types must in the main be true.

It will be observed, however, that the position of types γ and β , except $\beta 2$, depend entirely upon the proper fixation of 32 on line $a 2$ and of 38 on line $a 3$. The position of 32 at the end of $a 2$ is tolerably certain, and so the lines $\gamma 1$, $\beta 4$ which depend upon it are also fairly certain. But the position on line $a 3$ of 38 from Aberdeenshire is very questionable. The sub-type $a 3$ to which it belongs is anything but continuous: it is full of gaps, and some members of it are geographically very far apart, ranging from Kent to Aberdeenshire. Perhaps 35 a, b, should form a separate sub-type. Although in No. 38 the neck curves outwards on the left side, the beaker certainly belongs to type a . The great difficulty is to connect it with any beaker geographically nearer to it than Northumberland and Yorkshire. Though it differs in profile and

the neck is rather shorter, it seems to have something in common with 43 of $\alpha 4$ from Fife. If so, it would no doubt be later, for, as it happens, they are exactly contemporary according to the diagram. There are other reasons for believing that No. 38 is placed too high up in the diagram. It makes $\gamma 4$ begin too early; it makes the head of the series No. 149 older than the beginning of $\alpha 5$, which, considering the geographical positions, is not likely. Correlatively, it makes $\gamma 4$ end too soon. Furthermore as 23a was found with a fine specimen of a food-vessel with a grooved shoulder and perforated stops, and 91, 92 of $\beta 3$ are both later than a similar food-vessel, while 92 is very likely a little later than a food-vessel of similar but later sub-type, the difference of time between 23a and 92, viz., fifteen years, seems insufficient for the development of the food-vessel. From these considerations No. 38 may properly be brought down some six units, more or less, which affects $\beta 1$, 3, $\gamma 2$, 3, 4, 5 exactly in the same measure. I take six units, or twenty-three years, as a reduction that is probably not far from the truth. One result of this change will be to show that some forms of the beaker lasted more than forty years longer in North Britain than south of the Tweed, a supposition which, *a priori*, is highly probable.

Diagram II.

Diagram II. shows the scheme of classification when No. 38 has been lowered to its approximately proper level. The lines representing the sub-types are now arranged in the same order in which they are successively described; the continuation of $\alpha 5$ in $\alpha 6$ is raised a little, and $\beta 2$ keeps its position with respect to $\beta 1$. Sub-type $\gamma 4$ still seems too high, and there may be some error in the series; for instance, 155 and 157 are not unlikely misplaced, and $\alpha 1$ does not seem to come far enough down. But, on the whole, I believe the diagram shows the development of the beaker types in Britain with substantial approximation to the truth. It may have covered a period of 200 years as a minimum.

The Archaeological Objects.

Tables I., II. present lists of archaeological objects that have been found with certain beakers of thirteen of the sub-types. They all indicate that the ceramic found with them belongs to an early period, but in quite a vague and general manner. None can be used for fixing, within narrow limits, the exact age of the accompanying beaker. The flint daggers and arrow-heads, the stone axes and axe-hammers, the jet buttons with the V-shaped perforation at the base, and the stone bracers, are all inheritances and survivals from the Later Neolithic period, but the line of development that each of these sets of objects took has not been worked out. It is the same with the knife-daggers of metal: it is uncertain whether the tanged type or the tangless type is the older of the two in Britain. But both Sir John Evans and Dr Thurnam are inclined to believe that the untanged type was the first to reach our shores. As the question is of real importance, it is well to describe the nine metallic daggers and knife-daggers of Table I., and compare them with similar daggers on the Continent.

The daggers and knife-daggers belong to two types: (1) the handle is attached to a plate at the base of the blade by three rivets: (2) the handle is attached to a tang.

(1) 7a, Avebury. The blade is 4 inches long by about $1\frac{1}{2}$ inches wide, flat, with a well-rounded head and three rivet-holes, arranged to form a triangle (*Proc. Arch. Inst.*, (1849), p. 110, figs. 12, 13.)

(2) 19a, East Kennet. The blade is $5\frac{1}{2}$ inches by $2\frac{1}{2}$ inches, flat, with a bevelled edge and well-rounded head. The three rivets form a triangle, and the semilunar mark at the base of the blade is nearly as wide as the base itself. (*Archæol.*, vol. 43, pl. 33.)

(3) 76a, Linlathen. The blade is $4\frac{1}{2}$ inches by about 2 inches, flat, thin, with point broken off, and the three rivets disposed in form of a triangle. The semilunar mark is somewhat angular, and the lines uniting it with the cutting edges incline somewhat downwards. (Anderson, *Br. and Stone Ages*, fig. 7.)

(4) 131, Collessie. The blade is 6 inches by about $2\frac{1}{2}$ inches, flat, thin, with a rather obtuse point. The semilunar mark at the base is united with the cutting edges by lines that incline downward. (Anderson, *op. cit.*, figs. 4, 5.)

(5) 147, Glenforst. Only small fragments of a thin flat blade were recovered.

TABLE II.

Beaker No.	Place.	Size.	Holes.	Section.	Found with	Where figured or mentioned.
1	Roundway, Wilts	4 $\frac{1}{2}$ " 1 $\frac{3}{8}$ "	4	flat	Tanged blade, flint arrow-head	<i>Arch.</i> , vol. xlii, fig. 120.
2	Winterslow, "	4 $\frac{1}{2}$ " 2"	6	flat	Tanged blade	" " 121.
3	Mere Down, "	4 $\frac{1}{2}$ " 1 $\frac{1}{8}$ "	2	flat (?)	Tanged blade, gold ornaments	<i>Evans, Anc. Stone Imp.</i> , p. 427.
4	Druffield, E. Riding	5" 1 $\frac{1}{4}$ "	4	curved	Tanged blade, amber beads	<i>Arch.</i> , vol. xlii, fig. 119.
5	Brandon, Suffolk	4 $\frac{1}{2}$ " 1 $\frac{1}{8}$ "	6	flat	Flint arrow-heads, flint	" " 122.
6	Andilney	4 $\frac{1}{2}$ " 1 $\frac{1}{8}$ "	4	curved	knife, etc.,	<i>Cat. Mus. A. I.</i> , Edinburgh (1858), p. 11.
7	Fyish, Ross	4 $\frac{1}{2}$ " 1 $\frac{1}{8}$ "	4	curved	" " " "	<i>Evans, op. cit.</i> , fig. 354.
8	Glenforas, Mull	3 $\frac{1}{2}$ " 1 $\frac{1}{8}$ "	2	flat	" " " "	Anderson, <i>Br. and St. Ages</i> , fig. 11.
9	Everley, Wilts	3 $\frac{1}{2}$ " 1"	4	flat	Bronze tanged chisel, whetstone, bone and horn implements	<i>Cat. Det. Mus.</i> , 96, figd.
10	Sutton Veney, Wilts	4 $\frac{1}{2}$ " 2 $\frac{5}{8}$ "	6	flat	Two boars tusks, broken beaker	" " 63, "
11	Wills	4 $\frac{1}{2}$ " 1 $\frac{3}{8}$ "	12	flat	" " " "	" " 232, "
12	Tung Grove, Herts	3 $\frac{1}{2}$ " 8 $\frac{1}{8}$ "	4	curved	" " " "	" " 326, "
13	Skye	2 $\frac{1}{2}$ " 1 $\frac{1}{8}$ "	1	curved	Flint knife, small cylindrical jet beads	<i>Evans, op. cit.</i> , fig. 353.
14	Dalmore, Ross	imperfect	(1)	curved	Flint knife, small cylindrical jet beads	Anderson, <i>op. cit.</i> , fig. 51.
15	Sittingbourne, Kent	3 $\frac{1}{2}$ " x 1 $\frac{1}{4}$ "	2	flat	Knife-dagger	<i>Proc. Soc. Ant.</i> , 2 ser., x, 29.
16	Bulford, Wilts	not stated	2	flat (?)	Part of a bronze spear	<i>Arch. Jour.</i> , vi, 319.
17	Aldbourne, Wilts	2 $\frac{1}{2}$ " x 1 $\frac{1}{8}$ "	(4)	flat	Bone tweezers, bone pin with four holes in the head	<i>Arch.</i> , vol. lii, figs. 21, 22.
18	Stelchoves, Bohemia	4 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ "	6	curved	Tanged bronze dagger, beaker like No. 77	<i>Pic., op. cit.</i> , i, 83.
19	Rothleben, Rudolstadt	3 $\frac{1}{2}$ " x 2"	4	curved	Two beakers	<i>Zeit. f. Eth.</i> , xxx, p. 21.
20	Fünen, Denmark	2 $\frac{7}{8}$ " x 1 $\frac{1}{8}$ "	5	curved	From a passage grave	Montelius, <i>op. cit.</i> , fig. 182.

(6) 36, Driffield. The blade is imperfect, measuring $3\frac{1}{2}$ inches by $1\frac{1}{4}$ inches. When complete it may have measured $4\frac{1}{2}$ inches in length. It is thin, flat, with a bevelled edge, and is provided with a tang nearly as wide as the base of the blade. Near the end of it is a rivet-hole. (Evans, *Br. Impl.*, fig. 278.)

(7) 58, Roundway. The blade is 10 inches by 2 inches, flat, with bevelled edge, and shows a curved mark at the base. It ends in a tang with curved shoulders, and weighs $5\frac{1}{4}$ oz. av. Thurnam describes it as a formidable weapon. (*Archæol.*, vol. 43, fig. 154; Evans, *op. cit.*, fig. 277.)

(8) 60, Winterslow. The blade is $5\frac{1}{2}$ inches by $1\frac{1}{4}$ inches, flat, with bevelled edge and a somewhat obtuse head. It terminates in a short broad tang with curved shoulders. (*Archæol.*, vol. 43, pl. 32, fig. 2.)

(9) 77, Mere Down. The blade is 5 inches by $1\frac{1}{2}$ inches, flat, with bevelled edge, and terminates in a broadish tang with sloping shoulders, and without a rivet-hole. (*Catal. British Mus.*, 81.)

Comparing daggers 1-4 with copper daggers from the Mondsee, figured by Dr Much (*Kupferzeit in Europa*, 2nd ed., figs. 12-14): from the Mondsee, Attersee, and St Blaise, figured by Dr Munro (*Lake Dwellings*, figs. 39, 8) it will be seen that they differ very much. The continental blades are all narrow at the base and acutely pointed at the head: the British are all broad at the base with a remarkably blunted or rounded head. The only point of agreement is that they are hafted with three rivets. Yet here again there is a difference, for the rivet-plate in the copper daggers is longer, and therefore the lower angle of the triangle formed by the position of the rivets is more acute. In a flat bronze blade from Pile, Sweden (Montelius, *Chron. d. alt. Bronzezeit*, etc., fig. 158), of period I:2, the 3 rivets form a very obtuse angle, even more so than in daggers 1-4. Long ago Dr Franz von Pulszky pointed out that the widening of the base of daggers was a later development, so that these four British daggers are evidently later than the continental ones referred to above. M. A. Bertrand figures a small bronze dagger from a neolithic station in Lozère with three rivets, which is very like the British flat daggers in the form of the blade, but no dimensions are given (*La Gaule avant les Gaulois*, p. 219).

In comparing daggers 1-4 with the triangular-bladed daggers of Italian type of period I:2 (Montelius, *op. cit.*, fig. 270, a, b, 307-8), the same broad base will be observed, but in the latter type the head is

more acutely pointed and the surface of the blade is ornamented with incised lines parallel to the cutting edges. The blade is also hafted with several rivets, arranged along a curve. The Scottish triangular flat blades 3, 4 are, I think, later than 1, 2, for a better preserved one, like that from Lochnell, Argyllshire (Anderson, *op. cit.*, fig. 8), is like two bronze blades from Únětitz and Holubitz in Bohemia, both with three rivets, figured by Dr Pič (*Čerhy předhist.*, pt. i. pl. xi. 21; pl. xix. 12), and it has also a greater resemblance in form to the Italian triangular blades of period 1 : 2. Indeed, if the arrangement shown in diagram II. is fairly accurate, both 3, 4, belong to the genuine Bronze Age 1 : 2, for both are later than No. 72, which itself is later than or contemporary with slightly flanged bronze axes.

Tanged blades.—A small knife-dagger, $4\frac{1}{4}$ inches by $1\frac{7}{8}$ inches, flat, tapering to a rounded point, with a rivet-hole at the centre of the tang, was found at Sittingbourne, Kent, and is now in the British Museum. It was found with a bracer of slaty stone, $3\frac{3}{4}$ inches by $1\frac{1}{2}$ inches, with a countersunk hole at each end (*Proc. Soc. Ant. Lond.*, 2 ser. x. p. 29). In France there are several tanged blades more or less resembling 6-9. From near Tournemire (Aveyron) comes a copper blade, thin, flat, with a pointed head and a tang tapering towards the butt end. With it were two small blades, a long perforated copper blade, and a copper pin with a richly ornamented head, which seems to belong to a Bronze Age type (*Matériaux*, xxii. 157). In the Archæological Museum at Madrid I saw two tanged flat copper blades from Palencia, in form almost identical with the above.

From the Grotto Bonniau, near Arles, came a blade 10 inches by $1\frac{1}{2}$ inches, with bevelled edge, and a short, rather broad tang. It was found with a conical bone button with the V-shaped perforation and several flint lance and arrow heads of neolithic aspect (*Matériaux*, XI. 544). In the Musée d'Histoire Naturelle at Toulouse I saw a tanged blade from the sepulchral grotto of St P^r Dardet (H. Garonne) of the same form as the above, but the point is broken off. It was found with a leaf-shaped arrow-head.

In a tumulus at Coatjou-glas (Finisterre), in a chamber of dry masonry at the centre of it, was found a cinerary interment, and with it a small bronze flat blade, 4 inches by $\frac{1\frac{1}{2}}{4}$ inches, terminating in a tang, which is perforated near the centre by a hole. Other objects with it were, four schist beads, a schist plaque (bracer?) with a hole at each end, and two points of flint arrow-heads (*Matériaux*, xxi. 51, pl. iv. 6).

From Castetviel d'Albi (Tarn) there are two blades 5 inches by 1 inch and $2\frac{1}{4}$ inches by $\frac{3}{4}$ inch. They are badly engraved, but seem to have a broad, low midrib, while the smaller one has a rivet-hole at the centre of the tang (*Matériaux*, xiv. 941). The larger of these resembles two tanged blades I have seen in the Musée Dobrée, Nantes. They are about 6 inches long, with a very slight midrib, a flat tang, and a rivet-hole near the end. One is from Brittany, the other from St Nazaire. Just above each lies a small socketed spear-head, with a hole near the base of the socket, suggesting that in each instance a spear and dagger had been found together. There is also a stout bronze dagger, 14 inches by 3 inches, of period 1:2, from Saxony, figured by Montelius (*op. cit.*, fig. 103), which, though larger and with a tang expanding at the butt end, is much like his fig. 480 (= (7) No. 58, Roundway). Yet this particular dagger seems exceptional and isolated.

The blade from Bounias, from its greater thinness, is probably considerably earlier than the Roundway dagger. Though no description is given of the Roundway arrow-head, it may be supposed to have been stemmed and barbed, and therefore of later type than those from Bounias. The same is probably true of the blades from St Pé Dardet and Palencia: they are earlier than the Roundway dagger. Though the Coatjou blade is narrower and smaller than that from Mere Down, and is narrow compared with the Sittingbourne blade, all three were found with the simple form of bracer, having but one countersunk hole at each end. In the opinion of M. de Chatellier, the Coatjou interment belongs distinctly to the Bronze Age. On the other hand, daggers 6-9 must be older than those from Tarn if these have a midrib, and belong to a type contemporary with socketed spears.

The above data are insufficient to determine which type of dagger first came to Britain, though they show that each type points in a different direction. The British tanged type looks to France and Spain for its source, the untanged type has its origin more in central and southern Europe.

If diagram II. is approximately correct in its suggested chronology, it must throw some light upon this obscure subject. According to it, knife-dagger No. 1 from Avebury of the untanged type is the oldest of the nine knife-daggers. At an interval of about twenty-two years it is followed by No. 2 of the same type. But contemporary with it is No. 7 of the tanged type. About nineteen years later comes No. 8, also a tanged blade. No. 9 has been equated with it in time, as the only available means for fixing the place of sub-type $\beta 2$. With it were ornaments of thin beaten gold, and this is the first time on record of the noble metal being found with the beaker ceramic. All these blades, it may be noted, are from Wilts. About fourteen years later comes No. 6 from Yorkshire, also of the tanged type, and for the second time gold is found associated with bronze. About forty-two years more seem to have elapsed before a dagger-blade can be noted in North Britain—No. 3 from Forfarshire, which is practically contemporary with No. 4 from Fife, where gold again occurs. The fragmentary blade from Mull, No. 5 seems to be about twenty-five years later than these. The interval of time between this and knife-dagger No. 1 appears to be about 128 years, or four generations, a period that, *a priori*, is certainly not unreasonable. Judged by the same method, it is reasonable to suppose that bronze or copper and gold should be used in the south of England before reaching Yorkshire, and that the use of these metals reached the east coast of Scotland at a still later date.

The next archaeological object that needs notice on account of its relative frequency is the bracer or wrist-guard of hard polished stone, slate, or more rarely of bone. Although bracers belong to the end of the Neolithic Age on the Continent, Table I. shows that they have not been found with sub-types *a1*, *a2*, and are with one exception confined

to types β , γ . In size they do not greatly differ. The total number of countersunk holes varies from 2-6, though one example from Wilts has as many as twelve, and was taken by the finder for a breastplate. Some archaeologists will not allow that the simplest form with a hole at each end is a bracer at all; they regard it rather as a pendant or amulet. In cross-section the bracer is either flat or curved, the inner side being concave and the exterior convex. Yet none of these characteristics seem sufficient to determine the age of any particular bracer. They evidently cover a great space of time, for No. 17 from Aldbourne was found with a burnt interment and a bone "tweezer" or "dress-fastener" (Greenwell), an object that is sometimes associated with stout bronze daggers of later date than the thin knife-daggers, and with a cinerary urn of a well-marked type. And No. 16 was found with part of a bronze spear, while an "incense cup" was unearthed from an adjoining barrow. The three foreign examples, which are probably older than the British, have all a curved inner and outer surface like Nos. 6, 7 from Aberdeenshire and Ross. But this coincidence is not sufficient to make it certain that these two bracers are older than Nos. 1, 2, which have a flat section. Local usage and prescription may have had something to say in the matter. Without exception, all the seven or eight bracers from Wilts and the two from Kent and Suffolk are flat. Hence, for some reason, a flat bracer was preferred in South Britain. As a type it is possible, though yet not proved, that the flat kind is later than the curved, but that fact would not justify our placing North British Nos. 6, 7 before all the examples from South, in the face of other evidence to the contrary.

My intention had been to give an analysis of the ornament and technic of the beaker types, but as this would involve the reproduction of 342 additional illustrations and a considerable number of extra pages of letterpress, I must defer that part of the subject for another occasion.

Food-Vessels and Burnt Interments.

In the foregoing pages mention has occasionally been made of food-vessels and burnt interments in connection with beakers. It is

important therefore to re-state clearly the different occasions on which these coincidences have occurred, so as to have a more precise idea of the facts of the case. The earliest beaker found in the same barrow with food-vessels, though not with the same interment, is No. 18 from Derbyshire. Yet there is nothing to show that these two types of ceramic are contemporary; in fact, the food-vessels seem both to be of a rather later type than that found with No. 23a. The difference of time between Nos. 18 and 23a seems to be about thirty-four years, and to suppose that beaker 18 was deposited a generation earlier than the two food-vessels does not seem an incredible supposition. According to diagram I. the difference of time between the beginning of *a1* and No. 23a is about seventy-eight years. At this distance of time from the commencement of the series a beaker, 23a, occurs for the first time exactly contemporary with a food-vessel described at p. 328, which for convenience may be called type A. As it is well made and belongs to a fully-developed type, quite at its prime, the type must have begun earlier, though at present I do not know of any earlier stages of its development. With No. 16 at the end of *a1*, which must belong to much the same time as 23a, was found another example of a food-vessel of type A. No. 48, at the beginning of *a6*, which by diagram I. is thirty-eight years later than 23a, was found in the same barrow as a food-vessel of type A, but at a distance of 16 feet from the centre. The food-vessel, though found at the centre, was a secondary interment. So it is impossible to be certain which was deposited first, though I think the probability is that the food-vessel is older by some years, for Nos. 91, 92, close to the end of *β3*, are, according to diagram 2, practically contemporary with the beginning of *a6* and with No. 48. Both of these are later than a food-vessel of type A, and No. 92 is possibly later than a food-vessel of a later sub-type A'. From these data it is evident that type A was at its prime when the form of the beaker had already begun to change for the worse, and had entered on a downward course. We have therefore to admit that the food-vessel class of ceramic is later as a type than the beaker class, though partly contemporary.

Incineration of the dead was doubtless practised during the beaker period, though examples of it are rare. The first instance of cremation that can be approximately dated is about seventy-three years later than the beginning of $\alpha 1$: it occurred with No. 34 of $\alpha 3$ from Suffolk. The next instance is found about twenty-seven years later, with beakers Nos. 123, 125, at the beginning of sub-type $\gamma 2$ from Yorkshire. The next occurs with No. 156 of $\gamma 4$ from Banffshire, and according to diagram II. is about twenty years later. About half a generation later cremation and inhumation were evidently contemporary in Fife when Nos. 131, 142 were deposited under the cairn at Collesie. A little later is No. 134 of $\gamma 2$ from Aberdeenshire, which was found with a burnt interment. Not much later, cremation and inhumation were evidently both practised when No. 105 of $\beta 4$ was placed only 2 feet below the top of a 21-foot tumulus, covering what seems to have been a burnt interment, and situated on the western extremity of the Ochils, above the Bridge of Allan. In the seventh example, No. 147a of $\gamma 3$ from Perthshire was deposited with a cremated interment, and seems to be about one hundred years, or three generations, later than the first example.

In addition to these, Sir Richard Hoare (*Anc. Wills*, i. 121, 199) mentions two instances in which he found beakers with burnt interments. Unfortunately all three, for two were found together, are now lost, though the two "incense cups" that accompanied the pair of beakers are at present in the Devizes Museum (*Cat. Deviz. Mus.*, 123, 123a). I should imagine that these beakers belonged to $\alpha 6$, and were contemporary with some of the examples just mentioned from North Britain. Apart from these two pygmy cups, neither of which are characteristic, there is no certain example that I know of where a cinerary urn, properly so called, has been found with a beaker. While the beaker ceramic flourished, a beaker or a food-vessel might be placed with a cremated body, but not an urn of recognised cinerary type, for such a type had not yet developed. Indeed, I think it can be shown that some of the cinerary urn types, including the "overhanging rim type," are derived from food-vessels.

The Map showing the Distribution.

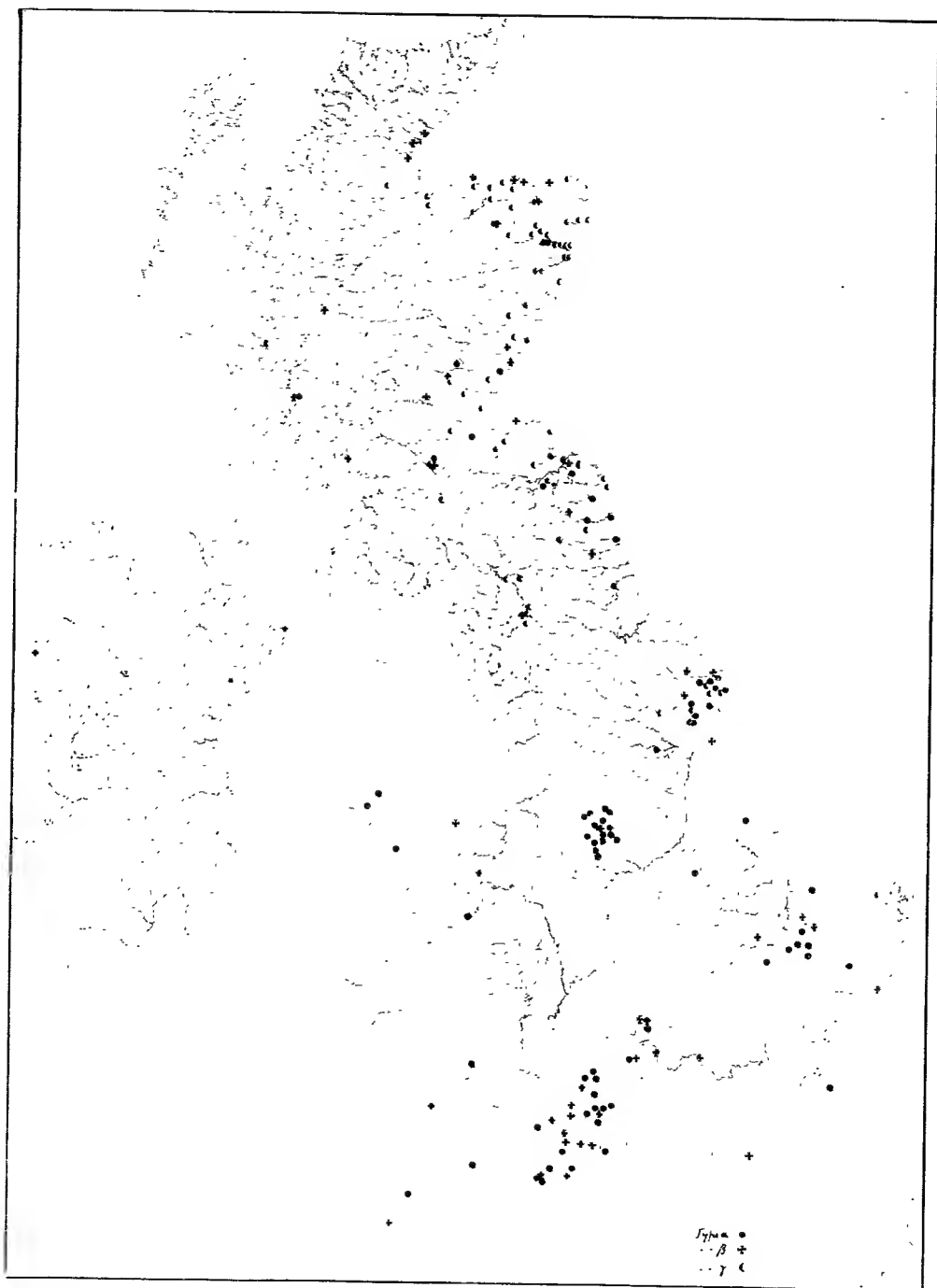
The map showing the distribution of the three types speaks for itself, though it must be explained that only the places where beakers have been found are laid down, not the number discovered in each place. So, too, the number of places marked is less than in the chart that accompanied my paper mentioned above. The reason is that now the types are discriminated, whereas in the older map the beaker types were not separated, and it was possible to enter on it records of finds which I cannot utilise now, from not knowing to what type the beaker belonged.

It is remarkable that only one example of a β type is known in Derbyshire and Staffordshire, and this is the only type yet found in Ireland.

Anthropological Data.

Although it is quite beyond the limits of this paper to enter into any detail with regard to the anthropology of the stock that introduced beakers into Britain and continued their manufacture for some two hundred years, yet it is of some interest to know whether the three types are the handiwork of the same people. The subjoined list shows that in all probability there was no difference between the people that made the three types. In it there is only one example of a dolichocephalous skull: all the others are brachycephalous, or a little under that limit. In two cases, 151 and 154a of γ 4, though no measurement of the skull is given, yet the descriptions of the skeletons, as being "very tall," and "large and tall," make it likely they belonged to brachycephalous individuals.

α 1	No. 13	Ceph. index	80·	β 1	No. 69	Very brachyceph.
"	14	"	85·6	β 2	" 86a	Ceph. ind. 78·
"	6	"	92·2	β 4	" 94	Brachyceph.
α 2	" 17	"	73·3	"	103	Ceph. ind. 82·4
"	18	"	78·7	γ 2	" 132	Platyceph.
β 1	" 67	Brachyceph.		γ 3	" 144	Brachyceph.
"	68	Ceph. ind.	80·6			



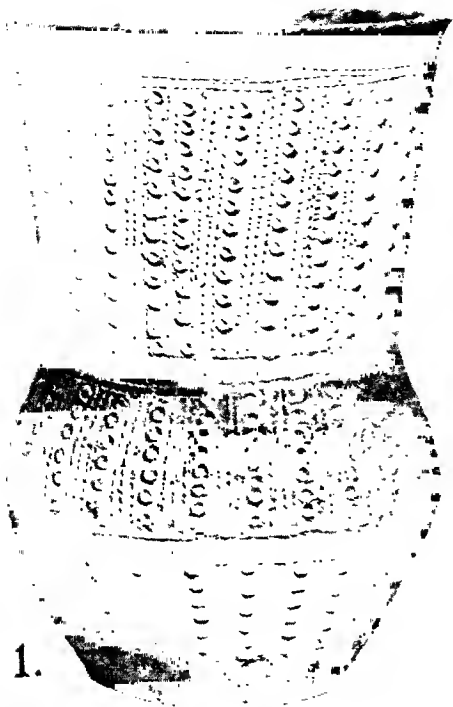
Map showing Distribution of Beaker Types.

CONCLUSION.

Supposing that the beaker types in Britain lasted about two hundred years, and that the sequences on diagram II. are in the main correct, the error in the middle of the whole series can, I fancy, hardly exceed \pm thirty years, or the length of a generation, though quite at the end this figure may be greater. If this is so, and if the facts recorded in the preceding pages are correctly interpreted, a very considerable accession has been made to our knowledge of the remotest corner of the Bronze Age. The beaker types can no longer be imagined to occur sporadically or at any time during this long space of time. Now they are seen to form a compact class, developing in various directions according to an unconscious law, and anchored firmly to the beginning of the Bronze Age, at a time when metal was very scarce and stone weapons had not been entirely displaced. The time can also be fixed with some precision when food-vessels came into use, and when cremation was beginning to come into fashion. The rounded-headed flat knife-daggers with a rivet plate and no tang are seen to have been imported earlier than the tanged type. And the use of metal is observed to pass by stages from south to north at appreciable intervals of time. Although this is what might be expected *a priori*, yet the fact that the typological arrangement points in the same direction, though more precisely, is an argument in its favour, for, with the exception of the flint daggers, no archaeological objects were taken into consideration in forming the sequences of the sub-types. With regard to beakers themselves, local varieties present themselves: some forms are confined to the inland parts of South Britain, others to the east coast south of the Wash. The β type, though otherwise very widely spread, is only known in the counties of Derby and Stafford by a single example. And one sub-type of γ is confined to part of the east coast of Scotland, while another, with one doubtful exception, belongs to the counties on each side of the Border. These facts seem to show that the new tribes possessed a certain degree of civilisation, were permanently settled on

certain areas, and did not nomadise at large. The craniological data make it probable that these tribes belonged to a common brachycephalous stock : and from the difference of time between the beginning of *a1*, *β1* it may reasonably be inferred that the migration from the Continent was not effected by a single movement, but covered at least some two generations in time.

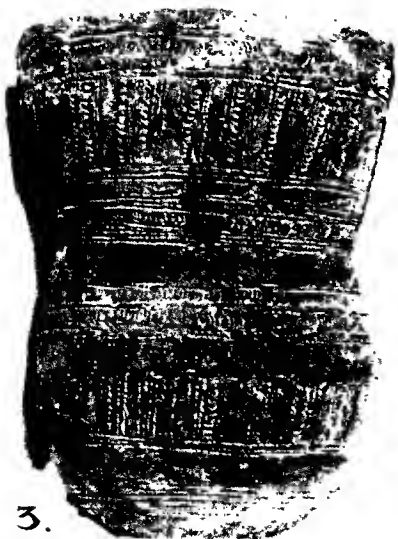
[The numbers appended to the illustrations which follow correspond to the numbers under which the particular urns are described in the foregoing classified list. Those which have numbers followed by letters are not illustrated.]



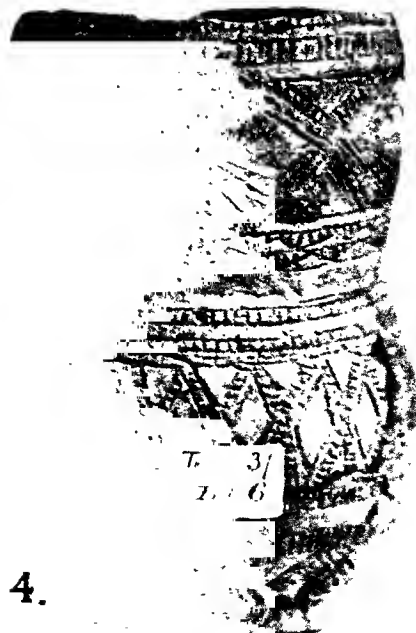
1.



2.

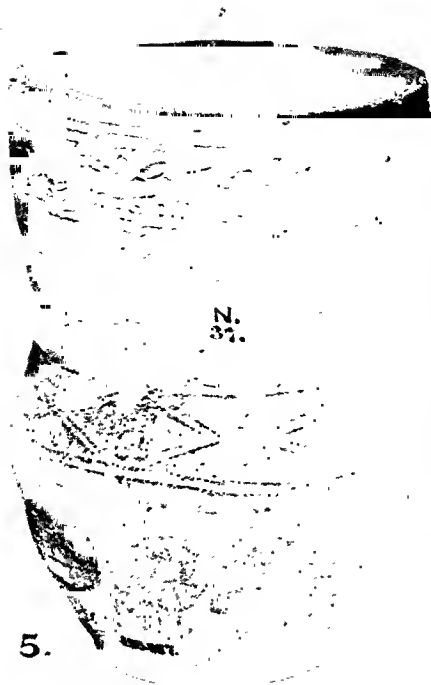


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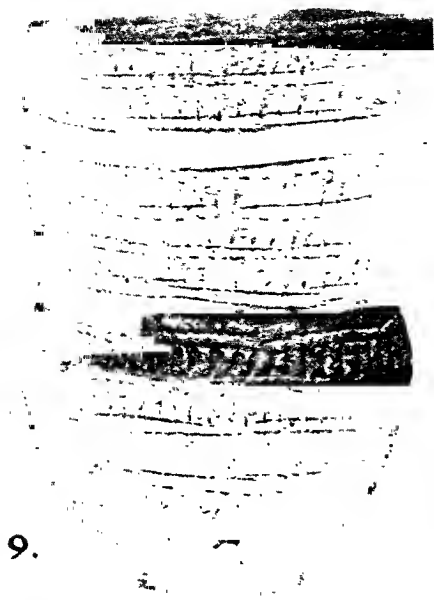


4.

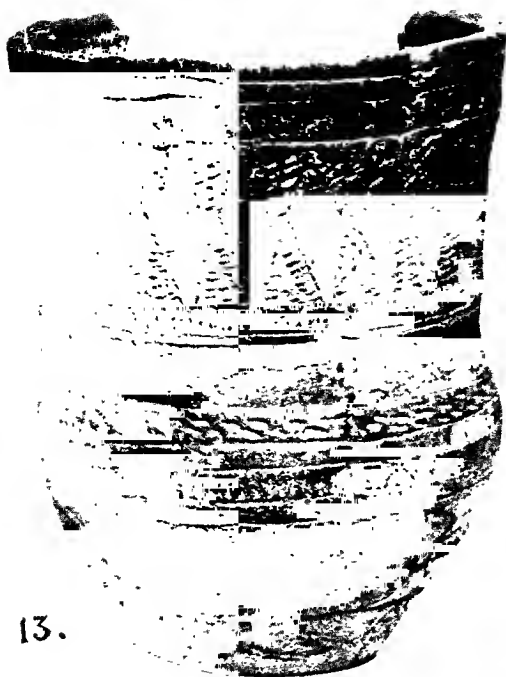
Beaker Urns, type *a*, high-brimmed, globose—sub-type *a1*.
VOL. XXXVIII.



Beaker Urns, type α, high-brimmed, globose—sub-type α1



Beaker Urns, type a, high-brimmed, globose—sub-type a1.



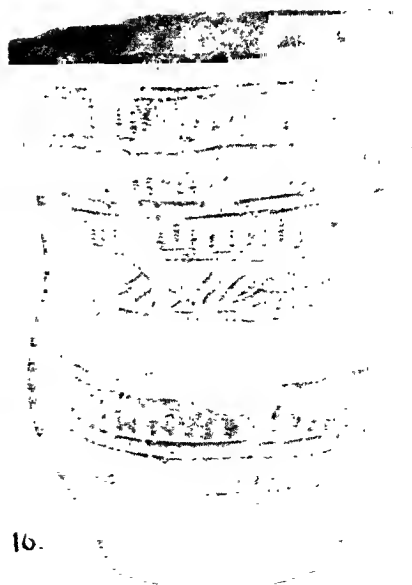
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14.

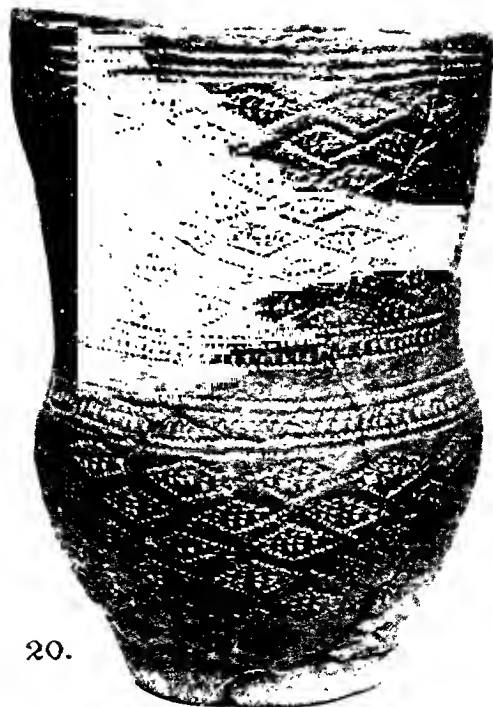


15.



16.

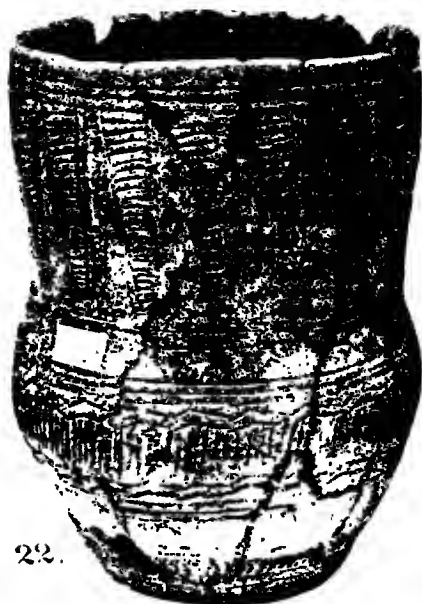
Beaker Urns, type α , high-brimmed, globose—sub-type $\alpha 1$.



Beaker Urns, type *a*, high-brimmed, globose — sub type *a2*



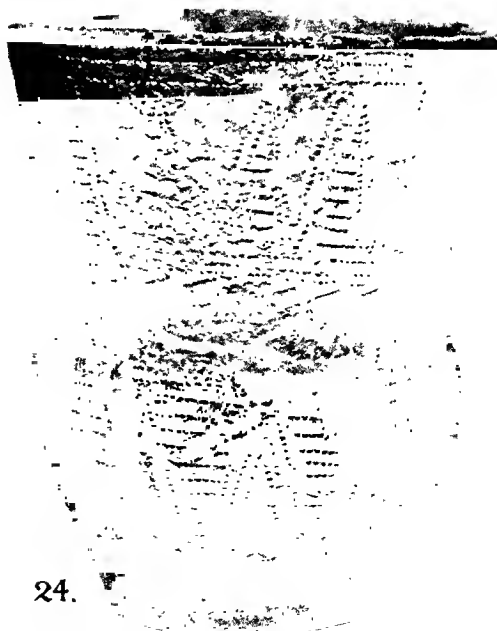
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22.

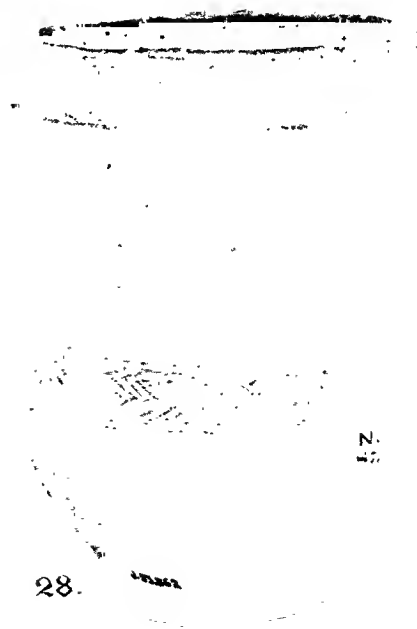
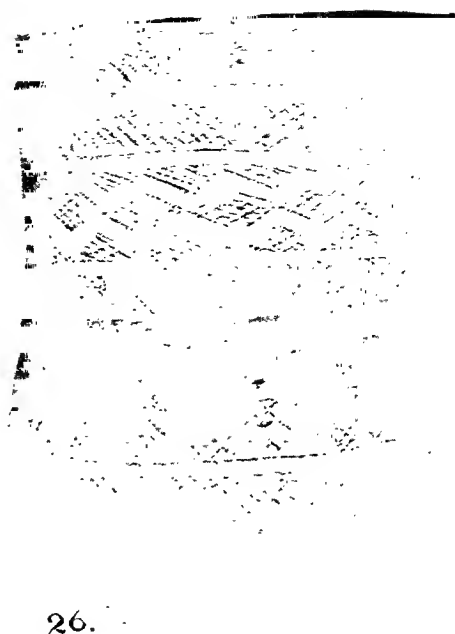


23.



24.

Baker Urus, type a, high-brimmed, globose—sub-type a2



Beaker Urns type a, high-brimmed, globose—sub-type a2.

29.

30.

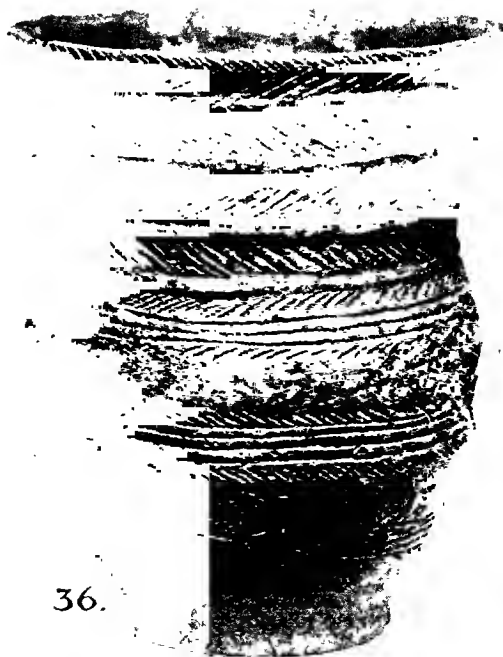
31

32.

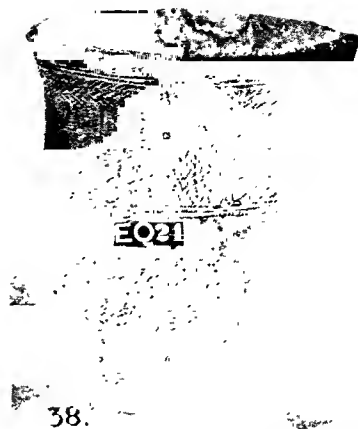
Beaker Urns, type a, high-brimmed, globose—sub-type a2.



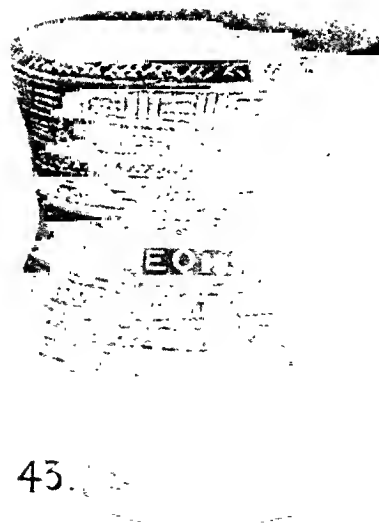
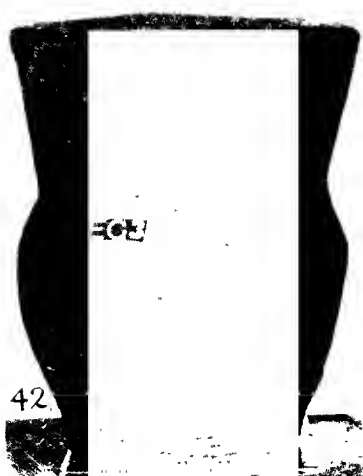
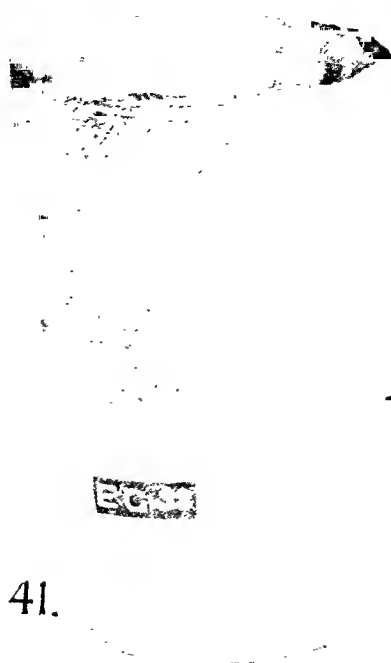
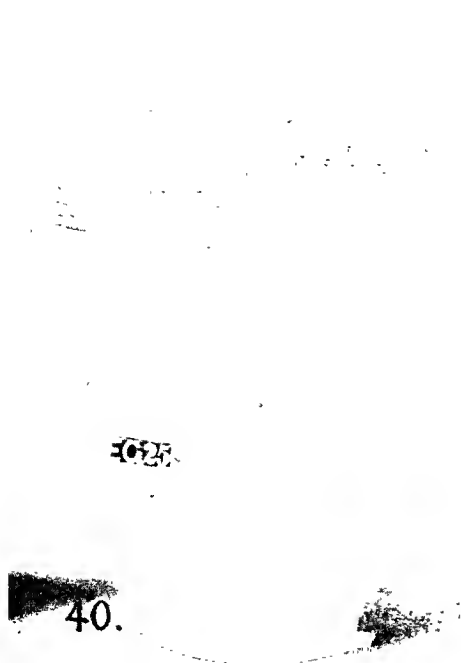
34.



Beaker Urns, type α , high-brimmed, globose—sub-type $\alpha 3$.



Baker Urns, type a, high-brimmed, globose—sub-type a3



Beaker Urns type a, high-brimmed, globose—sub-type a4.



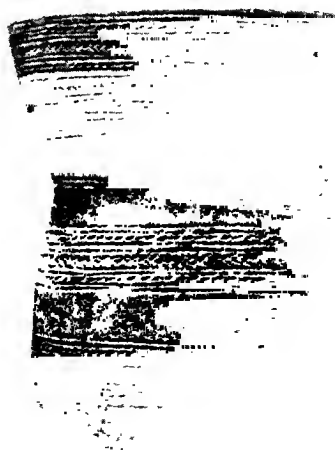
44.



45.



46.

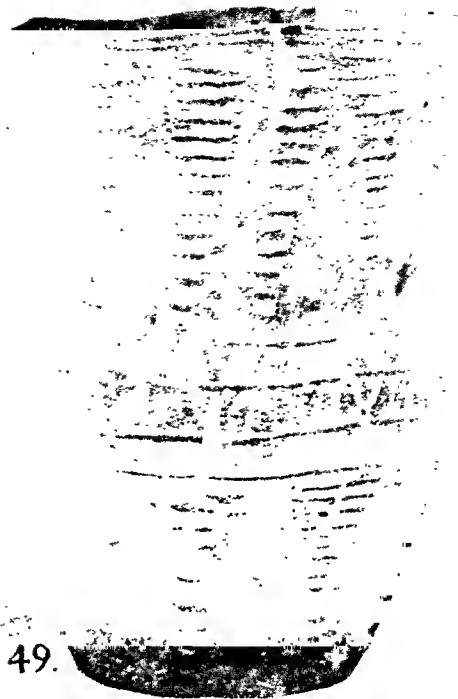


47.

Baker Urns, type a, high-brimmed, globose—sub-type a5



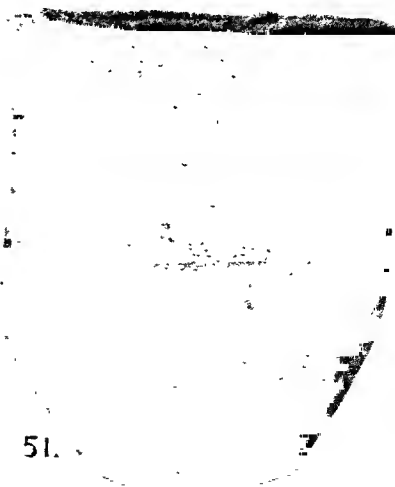
48.



49.

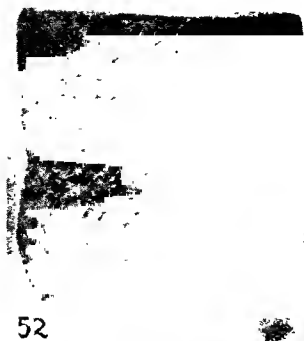


50.



51.

Beaker Urns, type α , high-brimmed, globose—sub-type $\alpha\beta$.



52.



53.



54.



55.



56.

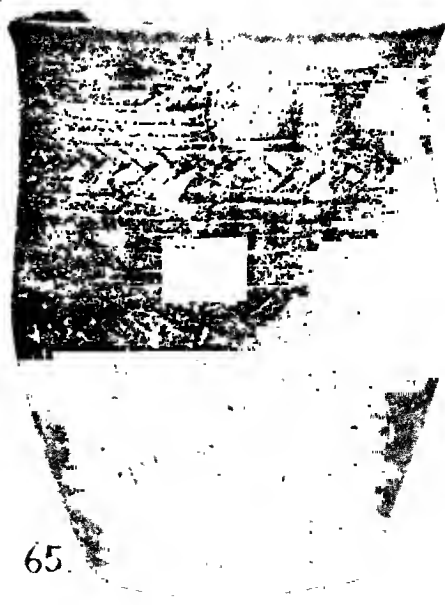
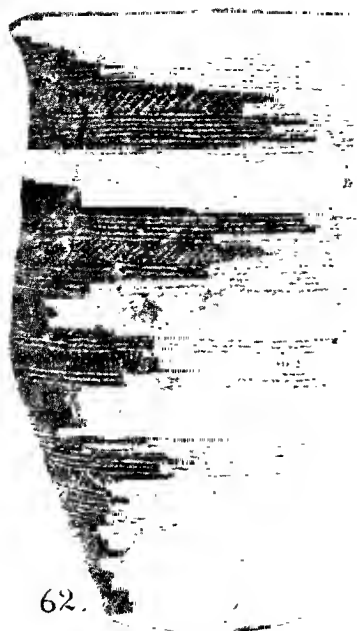


57.

Beaker Urns, type α , high-brimmed, globose—sub-type $\alpha 6$.



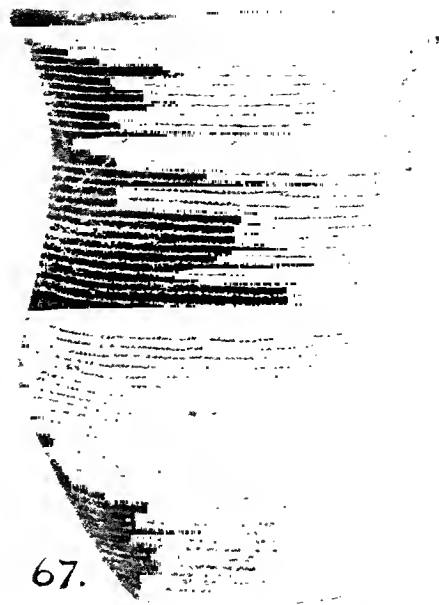
Beaker Urns, type β , ovoid, with recurved rim—sub-type $\beta 1$.



Beaker Urns, type β , ovoid, with recurved rim—sub-type $\beta 1$.



66.



67.



68.



69.

Beaker Urns, type β , ovoid, with recurved rim—sub-type $\beta 1$.



70.



71.



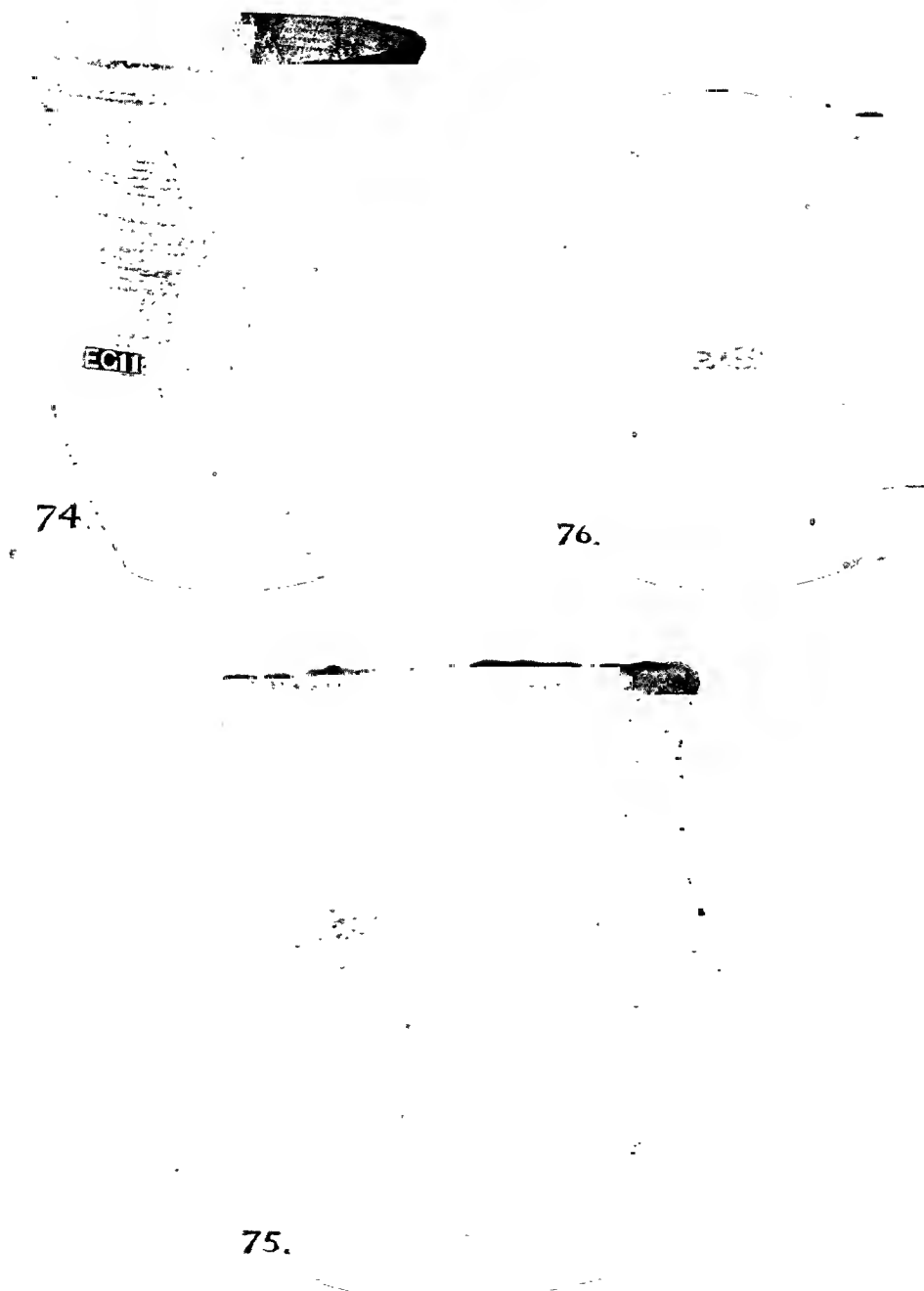
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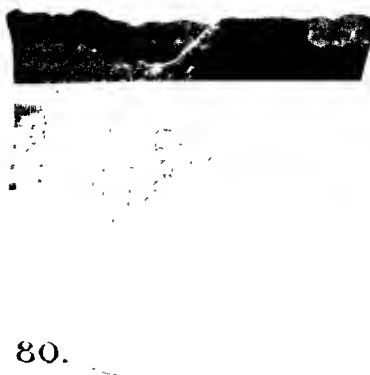
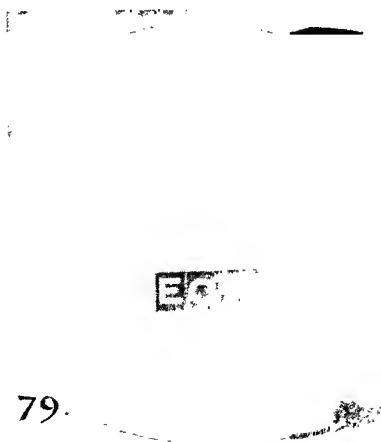
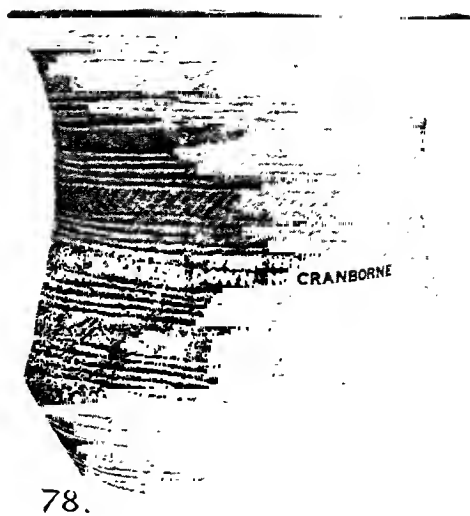
73.

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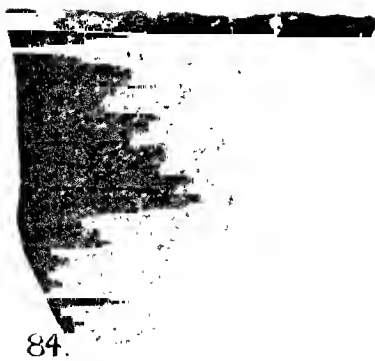
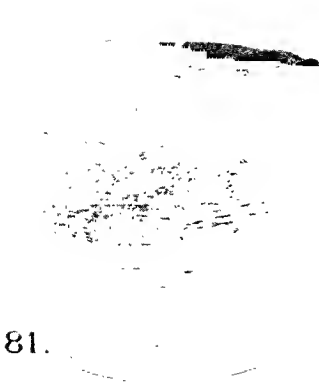
Beaker Urns, type *B*. ovond, with recurved rim—sub-type *B1*.



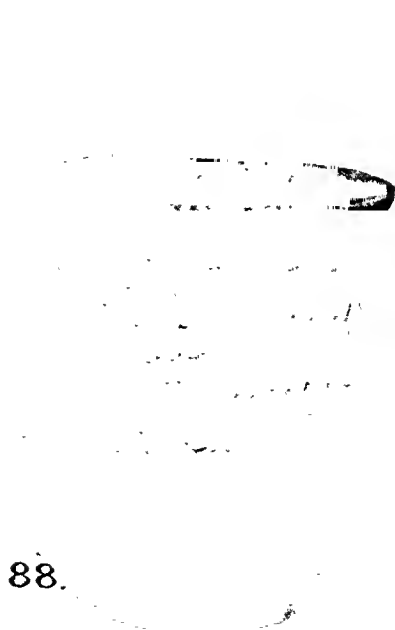
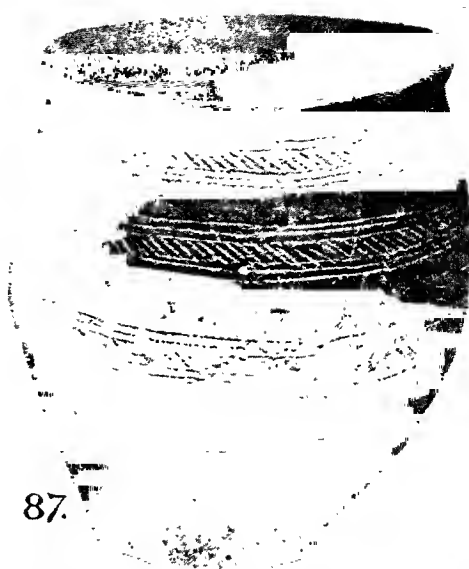
Beaker Uns. type β . ovoid, with recurved rim—sub-type $\beta 1$.



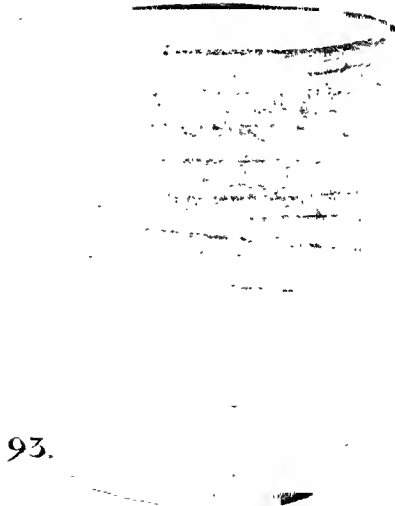
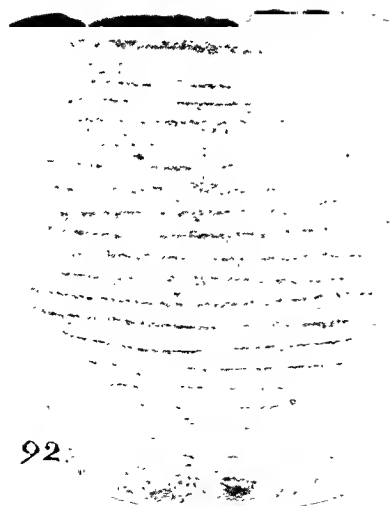
Beaker Urns, type β . ovoid, with recurved rim—sub-type $\beta 2$.



Beaker Urns, type β , ovoid, with recurved rim—sub-type $\beta 2$.



Beaker Urns, type β , ovoid, with recurved rim—sub-type β_3 .

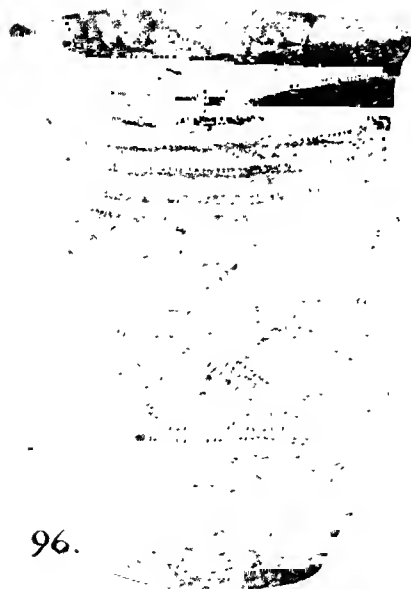


Beaker Urns, type β , ovoid, with recurved rim—sub-type $\beta 3$.

CULBONE HILL,
EXMOOR AUG 1894.
By THE RT HON EARL OF LIVERPOOL.
BRONZE AGE.



94.



96.

95.



97.



Beaker Urns, type β , ovoid, with recurved rim—sub-type $\beta 1$.

98.

99.

100.

101.

Beaker Urns, type β , ovoid, with recurved rim—sub-type $\beta 1$.

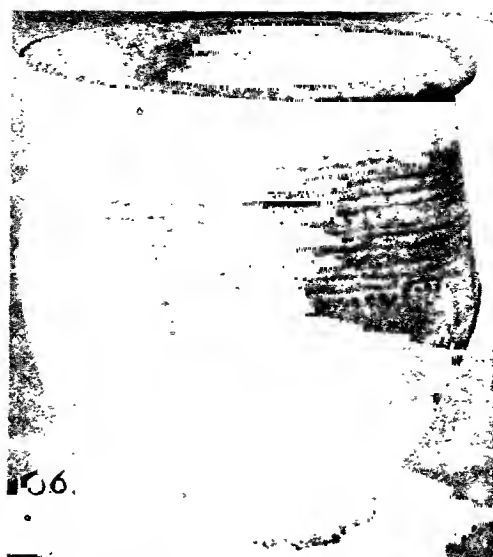
102.

103.

104

105.

Beaker Uins, type β , ovoid, with recurved rim—sub-type $\beta 1$.



107.

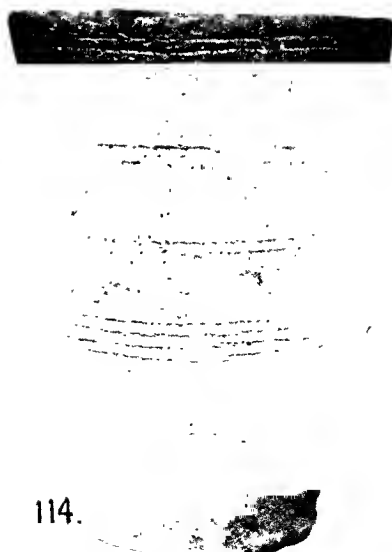
108.



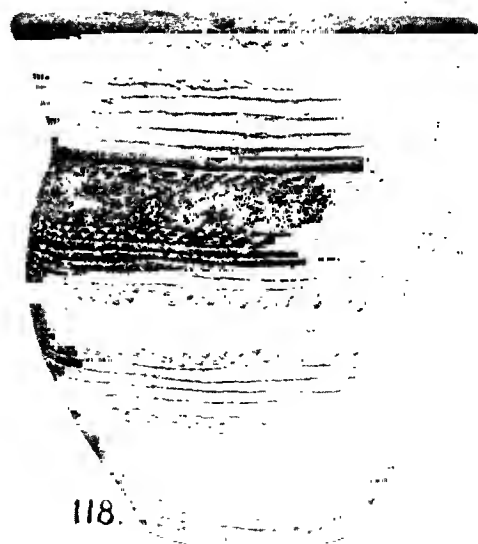
109.

110.

Beaker Urns, type B, ovoid, with recurved rim—sub-type B1.



Beaker Urns, type γ , low-brimmed—sub-type $\gamma 1$.



Beaker Urns, type 7. low-brimmed—sub-type 71.

119.

120.

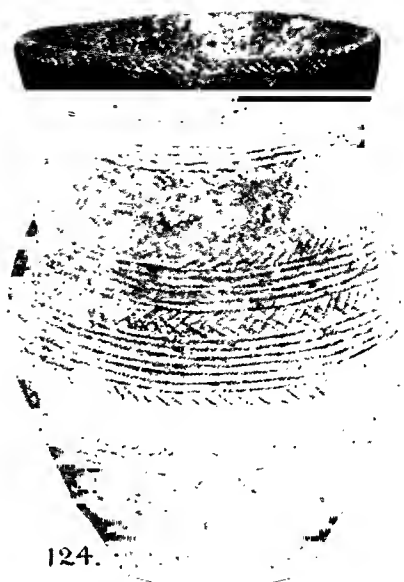


EC18

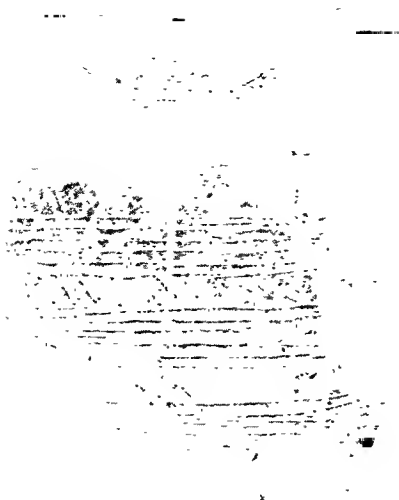
121.

122.

Beaker Urns, type γ , low-brimmed—sub-type $\gamma 1$.



Beaker Urns, type 7, low-brimmed—sub-type 72.



127.



128.

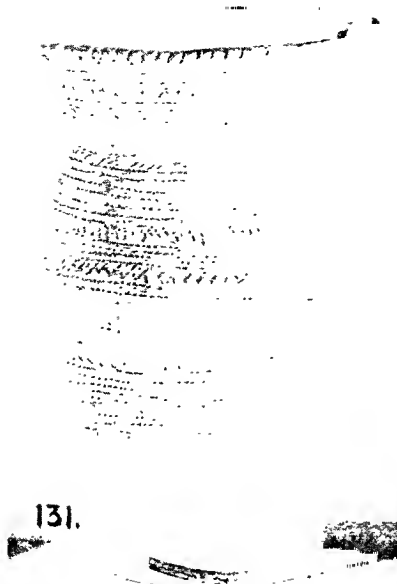


129.



130.

Beaker Urns, type γ . low-brimmed—sub-type $\gamma 2$.

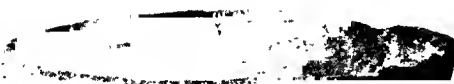




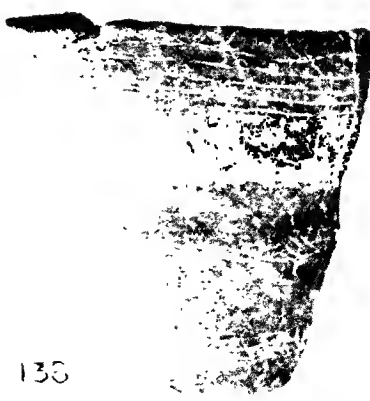
135.



136.



137.



138

Beaker Urns, type γ , low-brimmed—sub type $\gamma 2$.



139.



140.



EQ13

141.



142.



143.



EQ32

Beaker Urus type γ , low-brimmed—sub-type $\gamma 3$.

144.

E 137

147.

E

145.

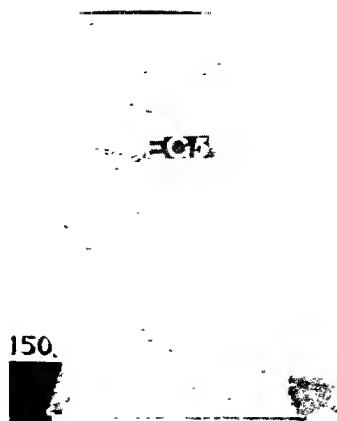
E 138

E

148.

146.

Beaker Urns, type γ , low-brimmed—sub-type γ :



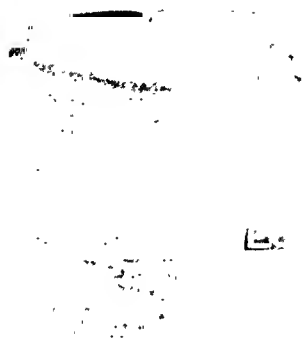
Beaker Urns, type 7, low-brimmed—sub-type 74



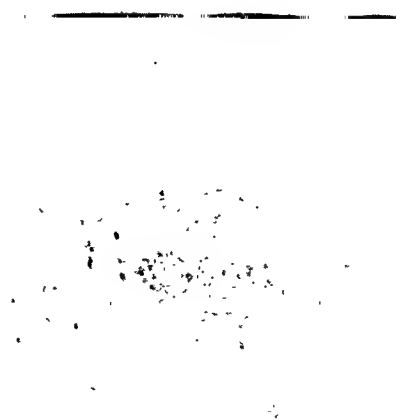
153.



154.

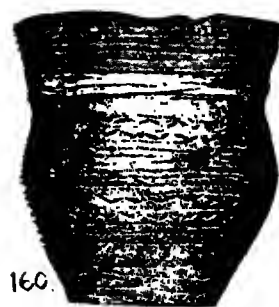
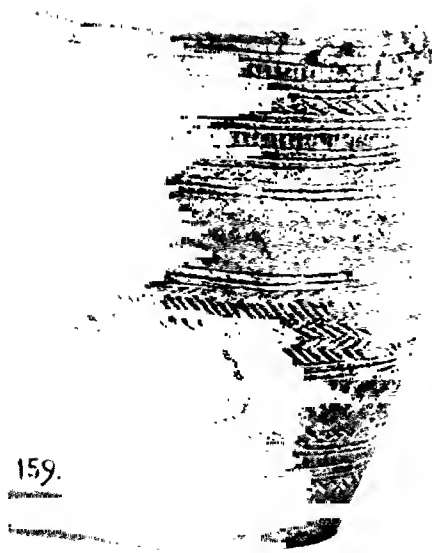
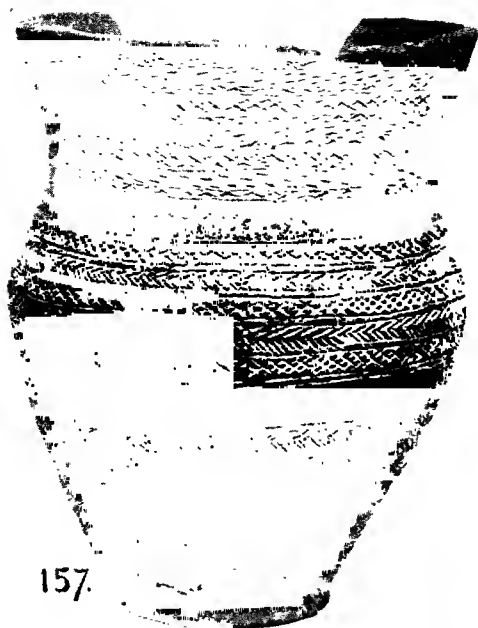


155.

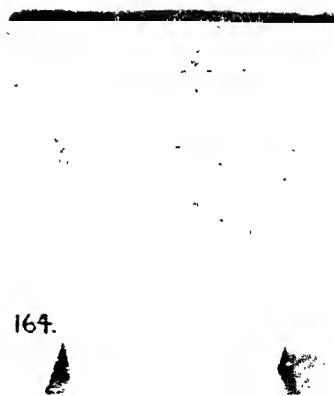


156.

Beaker Urns, type 7, low-brimmed—sub-type 74.



Beaker Urns, type γ , low-brimmed—sub-type γ_1



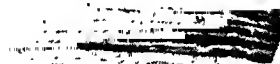
Beaker Urns, type γ , low-bellied—sub-type $\gamma 4$.



164^{bis}.



165.

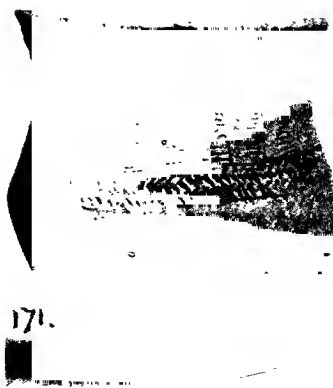
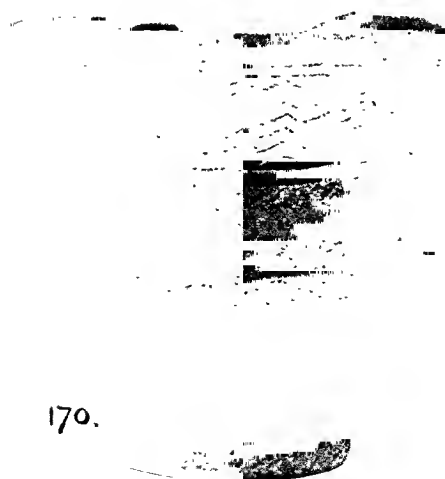
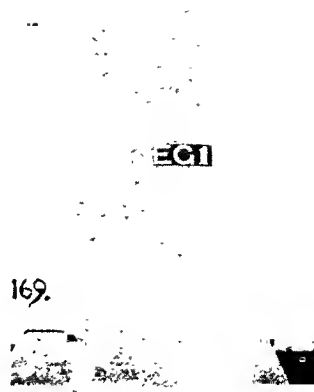
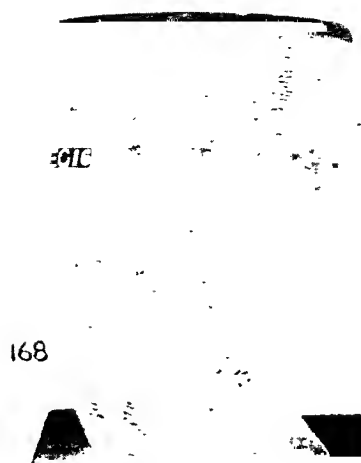


166.



167.

Beaker Urns, type γ , low-brimmed—sub-type γ_5



Beaker Urns—type γ, low-brimmed—sub-type γ5.

MONDAY, 11th April 1904.

ROBERT MUNRO, M.D., LL.D.,
Vice-President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows : —

FRANCIS CAIRD INGLIS, Rock House, Calton Hill.

LIONEL GRAHAM HORTON-SMITH, Barrister-at-Law, 53 Queen's Gardens,
Lancaster Gate, London.

Major-General T. R. STEVENSON, C.B., of Sunnyside, Lanark.

H. STEWARD WATLING, Architect, 86 Whiting Street, Bury St
Edmunds.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1) By the daughters of the late General Sir JOHN MACDONALD,
K.C.B.

Late Celtic Armlet of Bronze, $2\frac{1}{2}$ inches internal diameter, in the shape of a coiled snake, of $3\frac{1}{2}$ twists, both ends terminating in conventionalised heads. It was found in Ramnoch before 1833, along with another armlet now in the Museum, and some other articles now lost. [See the subsequent communication by Dr Joseph Anderson.]

(2) By Mrs D. O. HILL.

Two necklaces, one of bronze beads, chains and pendants, the other of bronze and glass beads mingled, found in ancient tombs at Perugia, Italy.

(3) By Mr JOHN MILNE, Maud, Aberdeenshire.

Axe of Grey Granite, $10\frac{1}{2}$ inches in length, by 3 inches across the cutting face, and 2 inches in thickness, found near the Giant's Cairn, on the farm of Cairnhill of Bruxie, parish of Old Deer.

(4) By Sir T. D. GIBSON-CARMICHAEL, Bart., F.S.A. Scot.

Baton of a Constable of the Scots Parliament, $27\frac{3}{4}$ inches in length, and bearing on both ends the seal of the Earl of Errol, High Constable.

(5) By A. W. LYONS.

Baton of the Dalkeith Constabulary, 1845, painted.

(6) By SPENCER GEORGE PERCEVAL.

Small Brooch of Silver, gilt, in form of the figures 45 (in allusion to No. 45 of the *North Briton*), and inscribed WILKES AND LIBERTY

(7) By W. J. GRANT, Beldornie Castle.

Cast of a Whinstone Boulder, $25\frac{1}{2}$ by 20 inches, with Cups and Rings, found at Hilton, Glass, Aberdeenshire, now preserved at Beldornie Castle, Huntly.

(8) By Mrs ERSKINE, of Kinnedar.

Table-Salt of White Lambeth Delft, standing on four feet, used in an Orkney family for over a century.

(9) By Miss DRYSDALE, of Westerwood, through Rev. W. FINDLAY.

Stone Ball, $3\frac{1}{2}$ inches diameter, one of four found near the Roman Fort at Westerwood, on the Antonine Vallum.

(10) By Mr J. P. WATSON, W.S.

Triangular Dagger-blade, of iron, with tang, the three faces of the blade concave, found in the bed of the burn at Invergowie

(11) By Mr JOSEPH PRATT, farmer, Crookahill.

Portion of human hair, 10 inches in length, and very black in colour, from a small burial cairn at Crookahill, New Aberdour, Aberdeenshire, under 5 feet of peat. The hair has been examined, microscopically and otherwise, by Dr T. H. Bryce, who pronounces it to be unquestionably human hair.

(12) By GILBERT GORDIE, F.S.A. Scot., the Author.

The Celtic and Scandinavian Antiquities of Shetland. 8vo, 1904.

There was also Exhibited :

By Rev. D. G. BARRON, Dunmottar Manse.

A small Gold Reliquary found in Dunmottar Castle. This little Reliquary (fig. 1), beautifully designed, and most elaborately ornamented

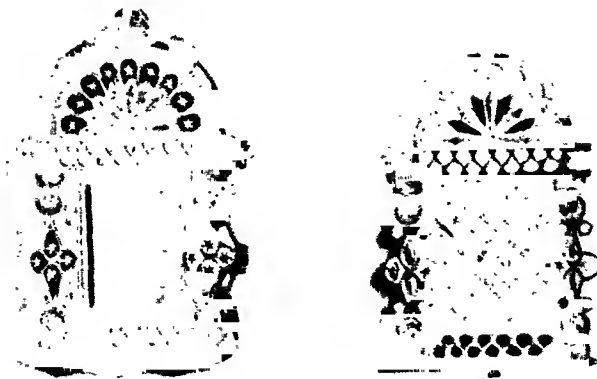


Fig. 1. Front and Back of Gold Reliquary found at Dunmottar Castle.
Slightly enlarged.

with filigree work and enamels, measures $1\frac{1}{2}$ inches in length by $\frac{7}{8}$ inch in breadth. It is in the form of a locket, the back opening on a hinge at

the bottom and fastening at the top by a catch. The pin of the hinge is gone, and the back being now loose, is shown separately in the illustration (fig. 1). When closed it forms a box about $\frac{1}{2}$ of an inch in depth. In the middle of the front is a panel filled with an enamel portrait apparently of a saint, with a nimbus (?) round the head. The enamel is much faded and in parts scaled off, but enough remains to show a green background with diagonal reticulations. The background behind the head is a square with a rounded top, apparently of gold leaf. The coloured enamels in the spaces made by the filigree ornamentation to right and left of the picture panel, and in the semicircle over it, are decayed and their colours altered, but the white enamels, each with a gold star of six points in the centre, have not suffered. In the semicircular upper part of the lid, the groundwork of the design is the same as on the front, but the enamels are reversed, the whites filling the spaces of the semi-rosette of nine petals and the coloured enamels filling the spaces round it. In consequence of this reversal the coloured enamels had each a gold star of six points in the centre, and the coloured enamels having decayed, the stars are alone left in the spaces. In the large panel in the centre of the lid the oblong rectangular spaces disposed in a kind of key pattern enclosing squares with quatrefoils of filigree work have been filled with coloured enamel, which is entirely decayed, and the quatrefoils have each had a globular setting in the centre, of which only three now remain. On this side also nearly all the white enamels are perfectly preserved. It is a most exquisite piece of workmanship, and its story has an element of romantic interest illustrating the perilous nature of the chances to which such objects may be subjected when they are not placed for preservation in some permanent public collection.

In a letter to Dr Anderson, the Rev. D. G. Barron thus tells the story of the Reliquary -

"It belonged to a former keeper of Dinnottar Castle, who possessed a large collection of curios of all kinds. His family had been long resident in the neighbourhood, his ancestors having apparently been

servitors of the Earls Marischal. On his death his possessions fell into the hands of his sister, from whom I first heard of the Reliquary. She described it as Queen Mary's Locket: said it had been found in the Castle, when or by whom I know not, and *must* have been the Queen's, 'because it had her picture on the outside of it.' I often expressed a desire to see it, and she promised over and over again to show it me, but always had some excuse for putting me off. After her death, some three years ago, I spoke to her executors and asked them to look out for the 'locket.' They made diligent search among her effects, but could find no trace of it, and had come to imagine, I fancy, that it had never had any existence except in my imagination. Two years elapsed, when one day they resolved to break up an old worm-eaten trunk which had remained in the house after everything else had been removed. A party got the trunk to demolish, and in doing so found that it had a false bottom, which concealed a hidden chamber, in which was a little box containing five early Victorian sovereigns in almost Mint condition—and the Locket."

The following Communications were read:—

I.

NOTES (1) ON THREE CARVED NORMAN CAPITALS FROM HOBKIRK, ON RULEWATER, ROXBURGHSHIRE: 2) DESCRIPTION OF THE REMAINS OF A WAYSIDE CROSS AT HARWOOD IN HOBKIRK PARISH. By A. O. CURLE, W.S., F.S.A. Scot.

I. The three capitals, which are the subject of these notes, were recently discovered in the vicinity of the Manse of Hobkirk, whither they had been removed from the churchyard by a former Minister of the Parish, for the not unusual purpose of adorning his rockery. Two



Fig. 1. Two Norman Capitals from Hobkirk.

of them (fig. 1), which may have formed the capitals of the columns at the doorway of the church, are fine specimens of Norman work of the first half of the twelfth century. They are decorated with bold scrolls of a foliaceous character issuing from the mouths of inverted grotesque masks on the lower portion of the frontal angles of the stones, and are all executed in high relief. The larger stone is 13 inches in

height, and the other, which has originally corresponded with it, has been cut down to $11\frac{1}{2}$ inches. The style of decoration closely resembles that to be found in the church of Edrom in Berwickshire, and on the east cloister doorway of Dumfermline Abbey. The third stone (fig. 2) is in all probability part of the same building as the others, though it differs from them in style of decoration. It is $12\frac{1}{2}$ inches high and is

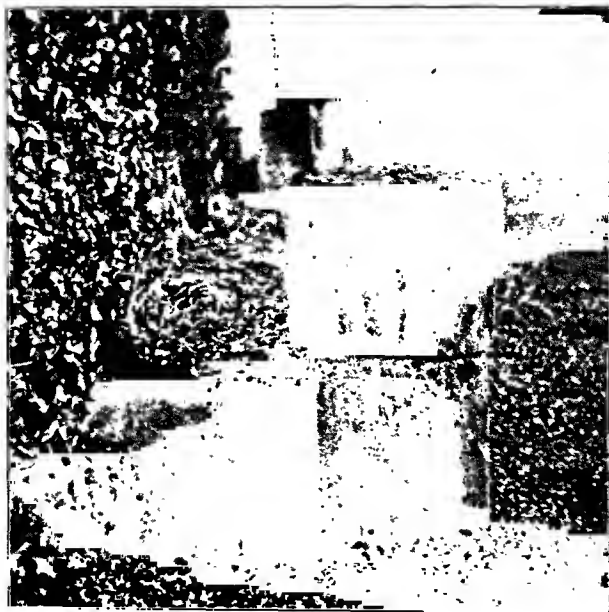


Fig. 2. Capital from Hobkirk.

a debased form of the Corinthian capital. On either side of the frontal angle on the upper part of the cap, are two spirals in low relief, between which and the rounded abacus are a series of vertical flutings. This may have been the cap of an angle shaft. All the stones are of the same nature, being light-coloured freestone, and brought, in all probability, from a distance, the building stone plentiful in the district being red in colour. The site of the present church of Hobkirk, which was erected in the year 1862, is in close proximity to that built on in

earlier times. It is situated in the "hass," or narrow neck of land, where the valley of the Rule is considerably contracted, half a mile above the village of Bonchester Bridge and some five or six miles from Rulemouth, where that stream mingles its waters with the Teviot. It is eight miles distant by road from Jedburgh Abbey, over a high ridge of land which separates the valleys of the Rule and the Jed, and a similar distance in a south-easterly direction from the town of Hawick. The earliest notice of a church on this site is to be found in the Register of the diocese of Glasgow, where under date 1220 occurs a reference to a dispute between the Bishop of Glasgow and the canons of Jedburgh, in settlement of which certain payments were to be made by a number of churches, including the church of Hopechirke. It is included in the list of possessions of the Abbey of Jedburgh at the Reformation, but at what date the Abbey acquired it, there is no extant evidence to show. Jedburgh Abbey was erected by King David I. about the year 1147, and in the charter by which Henry, Earl of Huntingdon, who died in 1152, confirms to the Abbey the grant of lands with which the king endowed it, the name of Hopkirk does not appear. Nor is there mention of it in the charter by William the Lion to the Canons of Jedburgh, dated about 1165. If these stones, therefore, are decorated in a style earlier than these dates, we have here the relics of a Norman church erected in a remote valley among the hills at an earlier period than the great Benedictine Abbey which subsequently possessed it. Whether the Norman church was destroyed in the invasions of the Borders during the sixteenth century, or fell a victim to old age and neglect at a later date, we cannot actually determine, but in the walls of the unpicturesque structure erected about the year 1692, and which gave place to the present building, these old stones were used as rubble. Mr Walter Deans, a local antiquary who followed the trade of a stone mason, records that "when the later church was taken down, many ornamental stones were found among the rubble: these consisted of parts of columns and pilasters with terminating capitals in imitation of Corinthian. Many of these stones were scattered about the churchyard and used as marks

for graves.' With the exception of those here noted, however, which he mentions as having been removed by the minister, they have all now disappeared. The stones are in the possession of Mr Tancied at Weens.

CROSS HEAD AT HARWOOD.

About a mile and a half up the watergate from the church of Hobkirk is situated the mansion-house of Harwood, the property of William



Fig. 3. Portion of Cross-head at Harwood.

Claude Elliot, Esq., and there, leaning against the fence which surrounds the gamekeeper's garden, I discovered one day last summer a portion of an old cross (fig. 3). It consists of the upper and two side arms, which are connected by bands or segments of a circle about two inches in breadth, slightly recessed on one face and concentric, meeting the arms midway between the base and the outer edge. The arms expand towards the outer edge, as in the form of cross known as Maltese; the angles at the intersection have been left filled in, presenting a convex

face concentric with the segments or bands connecting the arms, in this respect differing essentially from the Celtic type of cross, where semicircular or rectangular spaces are left at the intersection of the arms. There is evidence on the undersides of the lateral arms that the bands were continued. The left arm has been reduced by the upper edge having been chiselled off probably at some later date. The dimensions of the cross, which is of the red sandstone native to the district, are—breadth across the arms 20 inches, thickness 6 inches, at base of the arms about 4 inches, at the extremity 12 inches, except the left arm, which has been reduced; the thickness is 6 inches. The cross was brought to its present position from the farm of Harwood Mill, half a mile nearer Hobkirk, where it had remained for a number of years built into the wall of the byre; thither it had been brought from the foundations of the house of Appotsyde, where it was unearthed many years ago. Appotsyde in bygone times belonged to the family of Loranue, a name long extinct in the district. It was situated on the Harwood burn, an affluent of the Rule, in a field to the west of Harwood Mill, and about a mile distant from Hobkirk Church. No trace of it now remains. The derivation of the name has some bearing on the subject under discussion. In old charters it is spelt Apotesyde or Apetsyde (never Abbotside), and it is conjectured that the name is a corruption of Aldpethsyde—i.e. the place beside the old path. In former times a hull road passed near by, leading to the valley of the Slitrig, and to Laddesdale, and it is a fair presumption that beside the track stood this cross. Many were the uses of the wayside cross. Beside it the devout made prayer; those bearing their dead to burial rested the coffin at its base:—it was a sign-post pointing the way to the church. There is a tradition in Cornwall that the pilgrim who had aught to spare left an alms on the wayside cross for the poorer brother who might follow. It guarded the way to the church presumably from evil spirits. Says Wyukyn de Worde, in *Dives et Pauper*, printed in 1496. "For this reason ben crosses be ye waye than whan folke passyng see ye cross they shoulde thynke on Hym that deyed on ye croyssse and worshippe Hym

above all thynges." This particular cross is quite without ornamentation. The form is uncommon by reason of the angle at the base of the arms being left filled in, in such a way that the outer edge follows the curve of the connecting circle. Four examples of crosses having the angles similarly filled in occur among the wheel crosses of Cornwall, and are illustrated in the Rev. Mr Langdon's *Old Cornish Crosses*, where also he refers to one at Woodchurch in Cheshire, and one in Adel Museum near Leeds. In the diocese of Carlisle, the early sculptured crosses of which have been described and illustrated by the Rev. W. S. Calverley, there are three crosses which not only closely resemble the one at Harwood, but two of them at least are also considered to be wayside crosses. They are to be found at Arthuret, Bromfield, and (Cross-Lacon), Rhéda. From the first mentioned we can obtain a comparatively accurate idea of what the form of the Harwood Cross was when complete; for though also imperfect, it has lost only the upper arm, the lower arm, shaft, and base being still entire. The arms which expand towards the edge are joined by the arcs of a circle and are separated by four spaces. The lower arm is completed exactly similar to the others, and terminates on the cross-shaft, which is 61 inches high, not counting the tenon which holds it into its socket, for the whole thickness of the shaft is not sunk into its pedestal as in earlier crosses. The cross at Bromfield, consisting only of the three upper arms, is decorated with flutings along the arms, and in the Cross-Lacon, which is without ornamentation, the holes are apparently sunk, not pierced through. I can find no data to enable me to arrive at any conclusion as to the period when these particular crosses were erected, except that from their connection with Norman, and later churches, they are unlikely to be pre-Norman. That they are almost devoid of decoration I do not think assists us; as among the Cornish crosses, over 300 in number, the wayside crosses are, as a rule, distinguished from the churchyard and devotional crosses by this characteristic. It is probable that the type developed out of the highly decorated and kindred form of the Celtic cross in the twelfth century.

II.

NOTICE OF UNDESCRIBED HOG-BACKED MONUMENTS AT ABERCORN
AND KIRKNEWTON. By THOS. ROSS, F.S.A. Scot.

In bringing before the Society a notice of four hog-backed monuments not hitherto described, it may be well to revert to what has already been done by way of illustrating this class of monuments.

In the *Proceedings* of the Society in 1885,¹ the late Mr Russell Walker described and illustrated all those in Scotland known at that date. These were as follows :—1 at Abercorn (he had heard of another, but could not find it); 1 at Brechin; 2 at Dornock, near Annan, Dumfriesshire; 5 at Govan, 3 of which only are illustrated and described: 1 at Inchcolm; 1 at Luss; 1 at Meikle; 2 at St Andrews (fragments, not described); 1 at Deerness, Orkney, a “coped stone covered with the scale ornament,” known only to Mr Walker from Low’s *Tour in Orkney and Shetland*; and 1 at Govan, “entirely disfigured.” In the *Proceedings* for 1888,² the Rev. Dr Duke described and illustrated another example found in the churchyard of St Vigean. If to this list of 17 monuments we add the 4 now to be described, it brings the number of hog-backed monuments in Scotland up to 21.

All of these monuments have not the hog-backed feature which has won for them their name. It will be observed that 3 of those at Abercorn are parallel in their sides and level on the top, so that they resemble more a roof-shaped shrine than a hog-back; but as they were found on the same site as the strictly hog-back one, and are covered with the same kind of scale ornament, it may be presumed that they belonged to the same age—they may be regarded as a variety of the same type. All those at Govan are hog-backed, as are also those at Luss, Meikle, Inchcolm, and Kirknewton, and one of the four at Abercorn.

¹ Vol. vii., New Series, p. 496.

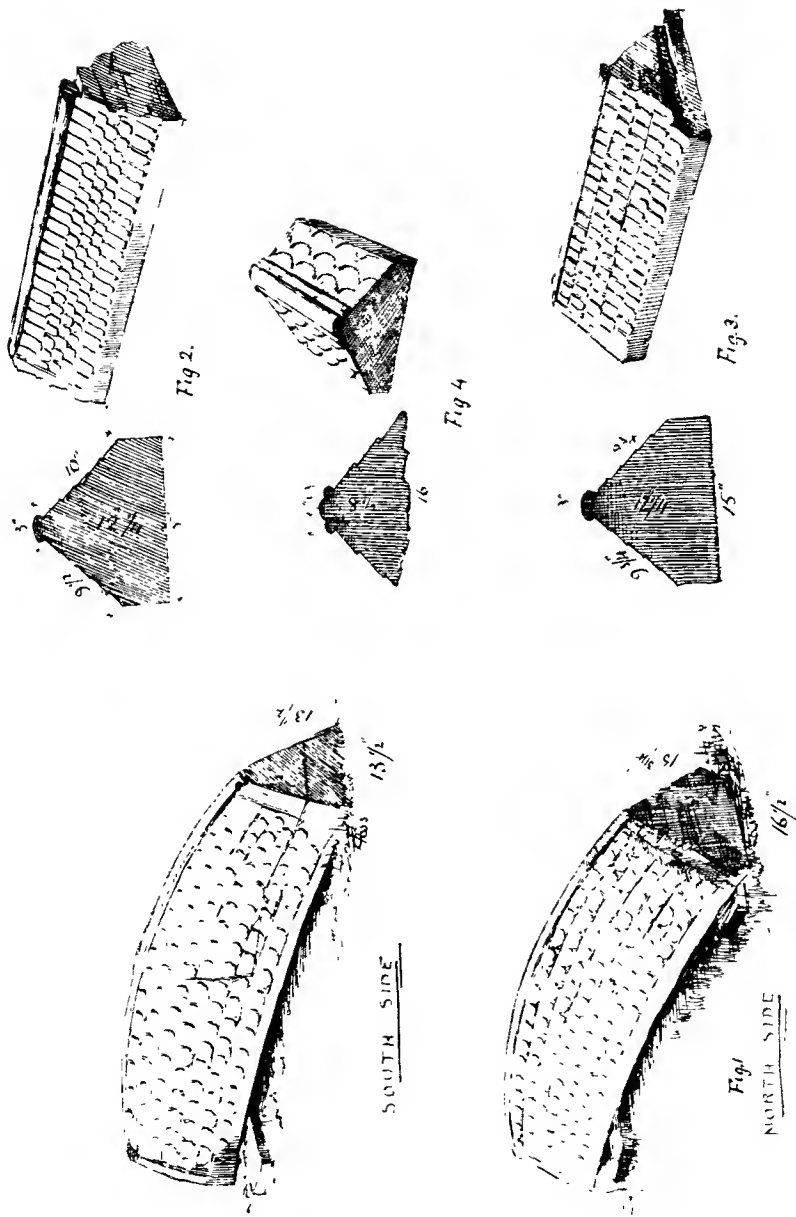
² *Ibid.*, vol. x., New Series, p. 113.

Many similar monuments are to be found in England, especially in the diocese of Carlisle, 2 at Gosforth, at Cross Canonby, Old Appleby, Broomfield, Aspatria, Plumblaud, Penrith, at Sockburn and Lower Dinsdale in Durham, Hexham, Heysham in Lancashire, Repton and Bakewell in Derbyshire, Bedale, Brompton, St Dyonis, Yorkshire, and St Judy in Cornwall.

Abercorn.—The complete monument at Abercorn (fig. 1) is, I understand, in or about its original position, but it has been slightly raised out of the ground and placed on two cross stones. It lies in the churchyard a few paces south from the west end of the ancient Norman Church of Abercorn, in a position somewhat analogous to that of the similar monument at Kirknewton and its ancient church. The broad and high end of the monument is towards the west. It measures 6 feet $1\frac{1}{2}$ inches long by $16\frac{1}{2}$ inches wide at the west end, and $15\frac{3}{4}$ inches high. At the east end it is $13\frac{1}{2}$ inches wide by $13\frac{1}{2}$ inches high; at its highest point it is about $20\frac{1}{4}$ inches. The stone is strikingly like a boat with the keel uppermost, with seven scalloped planks, as it were, overlapping along its bellied rounded surface; both sides may be said to be alike, except that on the south side there are 17 scales in the length of the lowest plank and 18 on the other side. The scales are considerably worn, soft and rounded on the edges, but still quite distinct almost all over. The flattish rounded keel is brought downwards at each corner, which seems to indicate a finish at each end, so that probably the stone is entire; it is possible, however, that each end may have been ornamented. There is a perpendicular base of some 2 inches or 3 inches high.

The three fragments (not hitherto described) are preserved in a room entering from the church. They were found somewhere about the site of the south aisle when it was being built, some ten or twelve years ago. Fig. 2 was lying above ground, and is doubtless the one which Mr Walker had heard about. Figs. 3 and 4 were found below the surface.

The monument shown by fig. 2 is 33 inches long by 15 inches broad and $12\frac{1}{4}$ inches high; it has a flat, round-edged ridge 3 inches wide: the



Figs. 1-4. Hog-backed Monuments at Abercorn.

sloping sides are not quite equal, one measuring 10 inches and the other $9\frac{1}{2}$ inches on the slope. Both sides are covered with scales in five rows, those on the larger side having the top and bottom scales considerably longer than the three intermediate ones. On the other side the scales are equal.

Fig. 3 is 28 inches long, and, like fig. 2, is 15 inches broad by $12\frac{1}{4}$ high, and with a similar ridge: its sloping sides are equal, measuring $9\frac{3}{4}$ inches. On each side there are five rows of scales of equal size.

Fig. 4 is a mere fragment about 10 inches long by 16 inches wide and about $8\frac{1}{2}$ inches high, and does not represent a whole section of the stone. The ridge consists of three rolls, measuring $4\frac{1}{2}$ inches over. The scales are of the same rounded type as in fig. 1, but, unlike it, they are quite sharp and well preserved.

Kirknewton.—This monument, fig. 5, is lying in the churchyard of Kirknewton, at a distance of about 6 yards south from the west end of the ruins of the ancient Norman Church of Kirknewton. It is thus in the same relative position to the church as is the similar stone at Abercorn, 8 miles due north from Kirknewton. The stone is believed to be in its original position, but the cross stones seen at either end are not supposed to be connected with it.

The high end of the monument, as at Abercorn, is towards the west. It measures 5 feet 7 inches long, and is $18\frac{1}{4}$ inches wide at the west end by about 13 inches high, and at its highest part about $\frac{3}{4}$ of an inch more. At the east end it is $14\frac{1}{2}$ inches wide and was probably about $10\frac{1}{2}$ inches high, but at this part it is broken away. In section, the sides are not equal—the ridge is not in the centre; each side is ornamented with three rows of scales. In addition to these, the upright base on the south side is enriched with a kind of nail-head ornament, much worn and rounded. The gabled west end has two rows of scales; the sinking shown in the apex is possibly a weather marking. The other end is rough and somewhat broken.

Many hog-back monuments have been found built into the walls of Norman churches as materials of their construction. Their pre-Norman

date is thus sufficiently established. Two of a very pronounced hog-backed shape were recently found in the foundations of the twelfth-century church of Gosforth, in the Lake district. Abercorn, as a monastery of

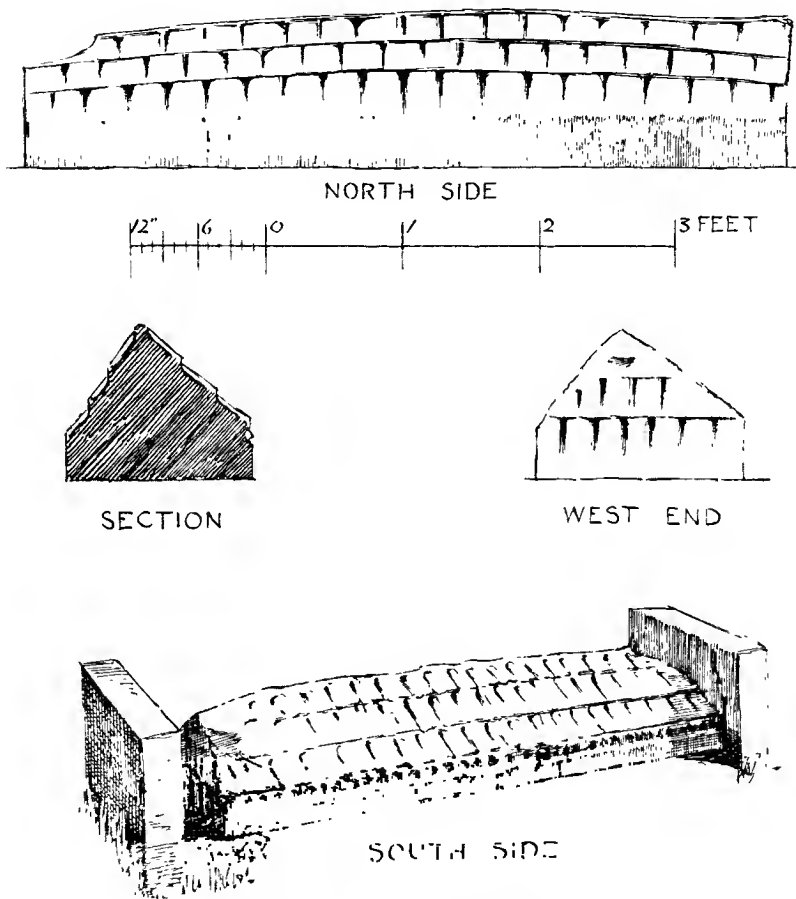


Fig. 5. Hog-backed Monument at Kirkcudbright.

the Northumbrian Church, dates back to the seventh century, and in consequence of the victory of the Picts over the Angles of Northumberland, Trumwine, the Bishop of Abercorn, fled to Whithy in 685. Although

the Northumbrian Church was thus overturned in the north, Abercorn still continued as a religious centre in the diocese of Dunkeld, and some time early in the twelfth century a church was built on the present site, of which portions still remain.

III.

NOTICE OF THE DISCOVERY OF A CIST OF THE EARLY IRON AGE, ON THE ESTATE OF MOREDUN, NEAR GILMERTON. BY FRED. R. COLES, ASSISTANT-KEEPER OF THE MUSEUM.

On the morning of Monday, 24th August last, I received a telegram from J. Welsh, Esq., the proprietor of Moredun, and a Fellow of the Society, to the effect that an "interesting Cist with skeletons" had been found on the estate. I replied, that I should come out in the afternoon, and asked that nothing should in the meantime be disturbed. Mentioning the discovery to my friend Mr C. W. Dymond, F.S.A., who happened to be in the Library, I gladly availed myself of his offer to accompany me; and, accordingly, on reaching Moredun, we were at once conducted to the site of the discovery by Mr Welsh and one of his sons.

I may here take the opportunity of expressing our warmest approval of the prompt action taken in this matter by Mr Welsh, for the results, as will be seen, prove how important it is that competent investigation should be made at the very outset of a discovery of this nature. Had one half of the discoveries, made in various parts of the country, received the same careful recognition as that bestowed by Mr Welsh in the initial stages of the examination now to be recorded, the results to Archaeology would be far richer and better defined.

On Saturday, 22nd August, some digging was being done on the sandy crown of a field called the Leat Hill,¹ which is situated one

¹ Speaking of this place-name to Prof. Mackinnon, I found that the Gaelic root from which it is derived, *leathad*, means a gentle declivity, a broad slope, the idea of breadth attaching to the adjectival form *leathan*. This precisely describes the locality.

furlong to the north-east of the main road and 200 yards to the south-east of the by-road which connects it with Moredun Mains. This Leat Hill is about 260 feet above the level of the sea.¹ It extends its sandy borders to a considerable distance all round the spot where the Cist was disclosed. It has been worked, from the east side, for a number of years and to a depth of some 35 feet; and it was during the removal of the sand near this central crest that the workmen saw, suddenly laid bare at their feet, an upright stone with the edge of another projecting over it. Mr Welsh, who was in the field, was at once informed, and on seeing the stones, conjectured their true purpose. More sand was then removed, disclosing a second and much larger covering slab. The smallest slab (B on the ground-plan, fig. 1) was then carefully lifted, upon which the skeletons were exposed to view. The stone was then replaced and the whole Cist carefully covered with tarpaulin, weighted with stones, so that, at the hour of our visit, the interment lay absolutely untouched.

Our first steps were directed towards obtaining an accurately measured plan of the slabs which covered the Cist (see fig. 1). These were all, as also the slabs composing the sides and ends, of a reddish-yellow sandstone of the same species as that to be seen in the bed of the Burdiehouse Burn, flowing some 400 yards to the west of the Leat Hill through Moredun grounds.

The tops of the largest slabs were level and lay at a depth of 2 feet 4 inches below the grassy surface of the field. The slab A, measuring 4 feet by 3 feet in extreme dimensions, covered three-quarters of the length of the Cist; the second in size, B, 3 feet 9 inches by 2 feet broad, more than covered the east end and projected 9 inches beyond. In the angle of junction between these two, lay a third and most irregular slab, C, 2 feet 5 inches by 1 foot. On the south of A was a

¹ The precise spot occupied by the Cist was ascertained, by careful chaining, by Mr Dymond, to whose great experience both in surveying and in archaeological research, much of the value of this account is due. The site is now marked upon Sheet VI., Edinburghshire, of the 6-in. Ordnance Survey. It may prove useful in the event of other discoveries.

fourth, which measured nearly 2 feet in length: but, as part of it had been broken when the east slab was lifted, its breadth could not be defined: but it had evidently been placed to cover as much as possible of the Cist not covered by the irregular south edge of A. It was curious to note, also, what a very small portion of C touched the flat edge of

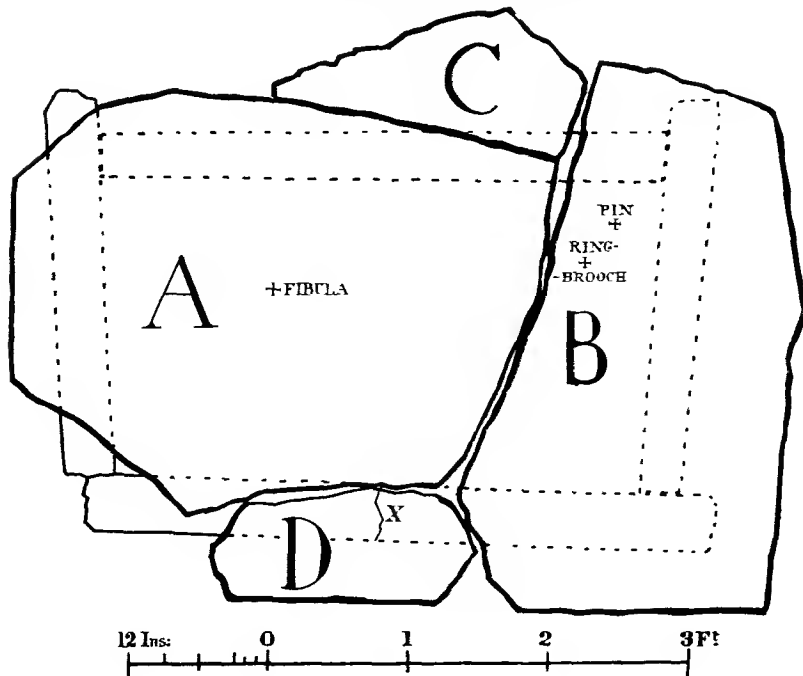


Fig. 1. Plan of the Cist and its Cover.

the north side-stone of the Cist. All the covering slabs were of an average thickness of about 4 inches.

The measurements and drawing having been completed, we had the covering-slabs removed. In doing this, so great was the pressure exerted on the long side-stones, that the short slab at the east end was very slightly pushed outwards over the edge of the sand-cutting, and thus a little fresh sand dribbled in at the north-east angle. In all

other respects, when these great stones were laid aside, the whole interior showed as in the illustration (fig. 2), reproduced from one of the excellent photographs taken by Mr F. C. Inglis for Mr Welsh.

The Cist lay E. 80° S. and W. 80° N. (magnetic reading), practically east and west.

The stones composing it were now carefully measured; they are represented by the dotted lines in the ground-plan (fig. 1). The inside measurements were: the North slab 4 feet, the South slab 3 feet 9½ inches, the slab on the East 2 feet 3 inches, and that on the West 2 feet 2 inches. Thus they formed a nearly regular oblong. These slabs varied in thickness from 3½ inches to 5 inches. The North slab was bounded by those on the east and the west; but the South slab, which was 4 feet 10 inches long, bounded these two. It was broken downwards across at the point marked X. All the slabs were vertically set into the subsoil. At the N.W. and S.W. angles, near the bases of the North, South, and the West slabs, several small pieces had been neatly fitted in to make up for certain fractures there. No artificial markings of any description were found upon any of the stones.¹

At this, our first examination, we left the true depth of the Cist to be afterwards ascertained; and, as daylight now failed us, all the stones were replaced, and again covered with tarpauln to prevent damage from rain. Directions were also given to the workmen that no interference with the Cist would be permitted. It was arranged by Mr Welsh that photographs should be taken, and the Cist thoroughly examined on Thursday of the same week. This was duly carried out on the afternoon of that day, by Mr Dymond and myself.

All my suggestions regarding apparatus having been amply complied with by Mr Welsh, and several excellent photographs taken by Mr Inglis, I began by measuring each of the larger bones and the skull before passing them up to Mr Dymond, by whom they were placed on

¹ The entire space occupied by all the four covering slabs which projected over the sides of the Cist, measured 5 feet 9 inches east and west by 4 feet 3 inches north and south.



Fig. 2. View of the Cist and its contents. (From a Photograph by Mr F. C. Inglis.)

sheets of paper in a large basket, and on boards prepared for them. I shall not trespass upon the ground to be traversed by Dr Bryce, in his account of the remains of the two skeletons found in the Cist, further than to state, that all the larger bones felt fairly firm and solid, that the skull which lay at the east end of the Cist was lifted out—after a deal of careful manipulation amongst the adhering soil—as complete as it could be, that is, *minus* its left or upper side and jaw: that one of the *femora* showed distinct marks of having been gnawed, a feature clearly shown in the photograph; and, lastly, that nearly all the *vertebrae* and the still smaller bones had either become quite disintegrated, or crumbled at the touch.

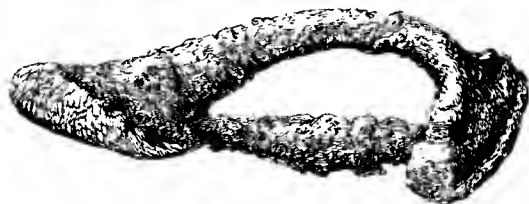


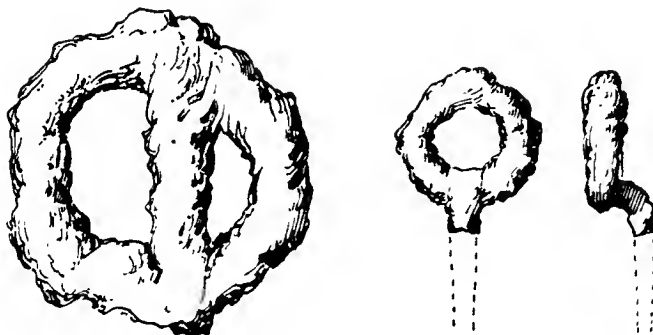
Fig. 3. Fibula of Iron from the Moredun Cist. (4).

When, as far as possible, the bones had been removed, I proceeded to lift out with a trowel all the soil, amounting to about 4 inches in depth. We both scrutinised every few trowelfuls as they were passed through the two sieves by the men.

The first relic thus obtained was an iron Fibula, of La Tene type (fig. 3). Fibulae of this type in iron¹ are rare, and this is the first example found in Scotland. It was found close to the loose teeth and the separate half jaw and portion of skull which lay near the centre of the Cist. It measures $2\frac{1}{2}$ inches in length, barely 1 inch in height, and across the hinge exactly 1 inch. A point of interest in connection with this fibula was observed on its being subjected to careful examination at

¹ General Pitt-Rivers found both bronze and iron fibulae on the same skeleton at Rotherley, Wilt.

the Museum. In common with other fibulæ of the same class, the point of the pin was caught in a turned up and flattened hook or catch at the end opposite the hinge; and adhering to the exterior side of this flattened hook and preserved by the oxidation, is a portion of the cloth in which the fibula was fastened when deposited in the Cist with the interment. This proves that the body had been buried in some kind of clothing or wrapping. There is too little of it left to enable the style of weaving to be accurately made out, but the threads appear to be of some vegetable fibre and not of wool, and the fabric must have been a very light one, loosely woven.¹



Figs. 4 and 5. Ring-Brooch or Buckle, and head of Pin, both of iron, found in the Cist at Moredun. ($\frac{1}{2}$.)

Next, there was found near the skull at the east end, and a few inches to the north of it, a Ring-Brooch or Circular Buckle (fig. 4), also of iron, with its pin attached, measuring $1\frac{3}{8}$ inches by $1\frac{3}{8}$ inches in diameter. Near the same spot I found the open circular head (fig. 5), $\frac{3}{4}$ inch diameter, of a long Pin of iron, with a small fragment of its stem broken sharply off. At the moment of discovery it was impossible to recognise the true character of this ring as a portion of a Pin of this type: therefore, I presume, the lower part of its stem being very thin through corrosion,

¹ Similar fragments of cloth caught in the fastening of the pin in brooches of the Viking time, from Tîree and from Haukadal, Norway, have been noticed by Dr J. Anderson in the *Proceedings*, vol. x. (1874), p. 561.

escaped our observation and slipped through the sieves. There is no doubt, however, that this Pin is of the same type as those found in the Broch of The Laws, Monifieth, Forfarshire, and in the kitchen-midden of the Fort at Gallanach, Argyleshire, afterwards referred to.

Having cleared out the soil to the level of the base of the side and end stones of the Cist, and proved that there was no flooring-slab, I measured their depth and found it to be between 21 and 22 inches.

All the bones were then carefully wrapped up, and carried in a basket to Moreslun House, whence they were, a few days later, forwarded to

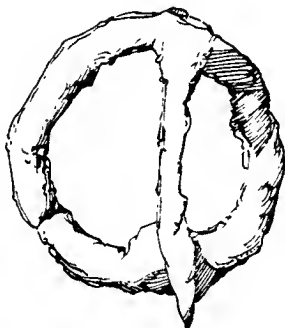


Fig. 6. Ring-Brooch or Buckle of Iron found in the Broch at The Laws.

the Museum by Mr Welsh, who has presented all the relics found on this occasion to the National Collection.

In examining the metal objects, deposited beside this interment, more in detail, it will be well to compare the extremely few similar objects recorded from Scottish sites.

Amongst the relics obtained in the Broch at The Laws, Monifieth, Forfarshire, in addition to the Pin above mentioned, was a Ring-Brooch of iron (fig. 6), precisely similar in form and very slightly less in diameter than the Brooch found in this Cist. There is a considerable difference, however, in the condition of the metal. In both the Pin and the Brooch found in the Broch, the points are quite sharp and the cylindrical shape of the objects well preserved. In all the three orna-

ments found in this Cist at Moredun, so much corrosion has taken place as to distigure and broaden all the lines of the metal. I do not adduce this feature as a factor in an argument for a greatly more remote period in the case of the Cist-relics; because, I think, we all came to the conclusion, that—as the plan (fig. 1) shows—there were interstices enough between the edges of some of the stones, to admit of the entrance of



Fig. 7. Pin of Iron from the Broch at The Laws.

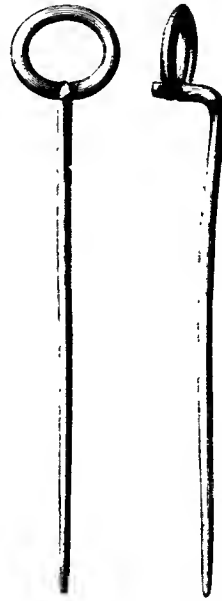


Fig. 8. Pin of Bronze from the Kitchen-midden at Callanach.

some small rodent, which the gnawed *femur* proved. Necessarily, therefore, the Cist was not air-tight or damp-proof.

Pins with an open circular head, of the type of that found in the Moredun Cist, have the upper part of the stem bent and projected forward at right angles to the planes of the lower part of the stem and of the head which is carried on the forward end of the projection. There are three of these pins already in the Museum. One (fig. 7)

was found in the Broch of The Laws,¹ Monifieth, Forfarshire. It is of iron, like the one from the Moredun Cist, and measures $3\frac{1}{4}$ inches in length. The second (fig. 8), which was found in the kitchen-midden of the Fort called Dun Fheurain, at Gallanach, Argyleshire,² is of



Fig. 9. Pin of Cast Bronze from the Broch at Bowermadden.

bronze, and slightly over 3 inches in length. The third (fig. 9), which is of cast bronze and has the head prettily ornamented, was found in the Broch of Bowermadden, Caithness. It measures $3\frac{3}{4}$ inches in length. There is also in the Museum a clay mould for

¹ *Proceedings*, vol. xvii. p. 361.

² *Ibid.*, vol. xxix. p. 282.

casting pins of similar form with similarly ornamented heads, which was found in the Broch of Lingrow, Scapa, Orkney.¹

A still more elegant bronze variety exists, three specimens of which are in the Museum, having the heads enamelled. A pin of this kind from Urquhart, Elginshire,² was presented by Rev. James Morrison in 1873. It is almost $3\frac{1}{2}$ inches in length, and the head, instead of being open and circular, is approximately semicircular and crowned with a straight row of four projecting small circular discs, the lower flat portion being enriched with "late-Celtic" ornament in red and green enamel. A very similar pin-head, but with only three of the small discs, was found on the Culbin Sands about five years ago.³ It could scarcely have exceeded 3 inches in length when complete. The last and finest specimen was found in Pabbay, South Uist, and was purchased for the Museum in 1900.⁴ This Pin measures $5\frac{1}{10}$ inches in length, and its head is enamelled in red and ornamented in almost precisely the same style as that of the Culbin Sands pin.

Of the same form are the two large pins of silver⁵ found with relics in the tumulus at Largo, known as Norrie's Law, and placed in the National Museum in 1883 by Mr R. Dundas. These pins measure $6\frac{1}{4}$ inches in length, and are identical in all respects, save that one bears two separate designs engraved on the back of the head. In both it is only the central disc that is socket-like, as if intended for a jewel, those on each side being rounded bosses of solid silver. The same arrangement is observable in the head of a third pin from Norrie's Law, a portion of which is preserved, measuring $1\frac{3}{4}$ inches in length. The lower flat portion of the head is simply ornamented with curves parallel to the contour of the head, with an oval between.

There are no definite indications of the period to which this burial may be assigned, unless they can be obtained from the characteristics of the accompanying relics. The absence of any of the distinctive forms

¹ *Proceedings*, vol. ix. p. 359.

² *Ibid.*, vol. x. p. 359; vol. xxv. p. 279.

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*, vol. xviii. p. 244.

of the Bronze Age Urns, and the presence of iron alone in association with the interment, assign it undoubtedly to the Pagan Iron Age. The circular buckle-shaped brooch is perhaps not sufficiently distinctive, but the pin having the open circular head carried vertically at the end of a bent portion of the upper part of the stem projected horizontally at right angles to the lower part is a very distinctive type, both in bronze and iron. From the circumstances and associations in which this type of pin has been found in Scotland, it appears that the variety with the open circular head must be placed earlier than that with the flat semicircular head often decorated with enamel. The open circular-headed pin found at Dun Fheurnain, Gallanach, is approximately dated by the piece of Samian ware and the long-handled weaving comb of bone found in the same kitchen-midden; while the similar pin of iron found at the Laws connects the form in iron with the period of the Brochs, and the occurrence of the same open circular-headed pin in bronze in the Broch of Bowermadden, in Caithness, and of the clay mould for making similar pins in the Broch of Lingrow, Orkney, in the outbuildings of which Roman silver denarii of the latter half of the second century A.D. were found, leads to the conclusion that these pins may be as early as the second century. The evidence afforded by the fibula found with the pin and ring-brooch in the Moredun Cist points to similar conclusions. Fibulæ of this characteristic form have occurred in several of the Roman stations on the German Limes and at other places in the Rhine Province. It is described in the Report of the Limes Commission on Osterbrücken (No. 40, 1895) as a very widely diffused simple form—the fibula of the common folk—derived from the late La Tène Fibula towards the close of the first century, and occurring frequently with coins and other objects assignable to the second century A.D. The conclusion from these concurrent circumstances of the associations of the types of relics found in the Moredun Cist is, therefore, that the burial can scarcely be earlier than sometime in the second century of the Christian era.

IV.

REPORT ON HUMAN REMAINS FOUND WITHIN A CIST AT MOREDUN.
MIDLOTHIAN BY T. H. BRYCE, M.D., F.S.A. Scot.

The bones submitted to me for examination by Mr Coles belong to two individuals. An examination of the photograph with the remains *in situ*, shows that they had been placed in the bent up position one above the other, the heads being directed to the opposite ends of the cist, but the faces in the same direction.

The remains are those of a young adult person and of an adolescent about twenty-one years of age. The sex cannot be determined with certainty in either case, owing to the fragmentary condition of the bones, and the great superficial erosion of such as are entire. The slenderness of the long bones of the younger person indicates that probably the individual was a female, and though the matter is more doubtful in the case of the older person, certain characters of the skull point in the same direction.

The skeleton of the adult is represented by one half of the skull, a clavicle, the long bones of the extremities, some old bones of the hand and foot—as well as fragments of several vertebræ, of the sternum, the scapulæ and ossa innominata.

Owing to the erosion of the surface, the muscular markings on the long bones are in great part obliterated.

The following are the chief measurements:—The *Humerus* measures 315 mm. in length. The *Femur* has a maximum length of 458 mm., and an oblique length of 455 mm. The transverse diameter of the shaft below the trochanters is 33·3 mm., the antero-posterior 26 mm., giving a platymeric index of 78·1. There is thus a certain amount of flattening of this region of the shaft of the bone. At the middle of the shaft the transverse diameter is 26 mm., the antero-posterior is 26·5, yielding a plilasteric index of 98·4.

The *Tibia* measures 363 mm. in length. In the upper third of the

shaft opposite the nutrient foramen the antero-posterior diameter is 37 mm., the transverse 28 mm. on the left bone, and the corresponding diameters on the right are 35 mm. and 27 mm. The platycnemic of the right bone is therefore 77, while that of the left is 75.6.

The stature, calculated from the length of the femur, is about 5 feet 5½ inches.

The skull is unfortunately much damaged. The whole of the left side (fig. 1), which was uppermost and exposed, had decayed away; and even on the intact side (fig. 2) the greater part of the side wall of the cranium, the upper part of the face, and the zygomatic arch have been broken away.

The accompanying table gives such of the chief measurements as it has been possible to take.

The transverse diameters have been arrived at by doubling the measurements taken from an artificial mesial plane, and are therefore only approximate. The photographs representing the reconstructed *norma verticalis* (fig. 2), and *norma facialis* (fig. 4), have been prepared by exposing two negatives, one of which was reversed. The positives obtained from these, being also reversed, when mounted side by side give the appearance of a complete skull.

Glabello-occipital length	192
Glabello-Iniud length	189
Ophryo-occipital length	189
Basi-bregmatic height	140
<i>Vertical Index</i>	72.8
Minimum frontal diameter	52 × 2 = 104
Stephanic diameter	64 × 2 = 128
Asterionic diameter	66 × 2 = 132
Maximum breadth	72 × 2 = 144
<i>Cephalic Index</i>	75.7
Horizontal circumference	265 × 2 = 530
Vertical transverse arc	160 × 2 = 320
Longitudinal arc	133
Frontal segment	145
Parietal segment	115
Occipital segment	393
Total	34
Length of foramen magnum	100
Basi-nasal length	



Figs. 1-4. Skull from the Cist at Moredun.

<i>Proportion of vault to base</i>	2.93
Basi-alveolar length	93
<i>Gnathic Index</i>	93
Nasio-mental length	115
Nasio-alveolar length	71
Lower Jaw { Symphyseal height	28
{ Coronoid height	58
{ Condylloid height	68
{ Gonio-symphysial length	89
{ Breadth of ramus	31

The radii measured on the mesial sagittal section are given in the following table. The Basion has been selected as a centre according to the method adopted by Sir William Turner in his "Memoir on the Craniology of the People of Scotland."¹ Owing to the imperfect state of the specimen it has not been possible to arrive at all the measurements given by him.

Basion to occipital point	113 mm
" " Lambda	122 "
" " mid-parietal point	140 "
Perpendicular (at right angles to plane of torus magnus)	138 "
Basion to Bregma	140 "
" " mid-frontal point	136 "
" " Glabella	110 "
" " Nasion	100 "
" " alveolar point	93 "
Basi-occipito-sphenoid axis or basial cranial axis	64 "
Distance from perpendicular to anterior pole of cranial cavity	80 "
Distance from perpendicular to posterior pole of cranial cavity	93 "

An examination of the skull shows that all the sutures are patent, and that the teeth, which are present in their complete number, show no signs of attrition. It must therefore have belonged to a young adult. The glabella and supraciliary ridges are very slightly developed.

In the norma lateralis (fig. 3) the frontal bone rises nearly vertically, then arches with a very full curve back to the bregma. This character, associated with the flatness of the glabella and supraciliary ridges, and with a somewhat thin orbital rim, points to the conclusion that the

¹ *Trans. Roy. Soc. Edin.*, vol. xl. part iii. No. 24.

skull may have been that of a young woman—but the general characters do not seem to me to be sufficiently distinct to warrant a positive assertion as to the sex.

The whole frontal bone is remarkably full and rounded. The vertex is flat, and shows no sagittal elevation; the curve of the arch begins to fall away about the middle of the parietal bone, and from this point passes gradually down to the slightly marked occipital protuberance. The cerebellar fossa is flat. The sides of the skull are well rounded out; and viewed from behind, therefore, it appears "well filled," the flat vertex forming a uniform curve with the rounded sides. The shape of the skull, as viewed in the *norma verticalis* (fig. 2), is ellipsoidal, and the breadth and fulness of the frontal bone is a marked feature. The same character is well seen in the sagittal section (fig. 1), as is also the flatness of the vertex. The straightness of the mesial section from the inion to the posterior border of the foramen magnum is another feature of note. This is due to the flatness of the *conjectacula cerebelli*, and it is an indication of the youth of the individual to whom the skull belonged.

There is a pterygo-spinous foramen due to the ossification of the ligamentous band extending between these processes.

The facial characters can only be conjectured owing to the absence of the Malar bones, and the greater part of the Maxilla. The absolute measurements of the height of the face indicate, however, that in all probability the skull would fall into the *lepto-prosopic* group, while the gnathic index places it low down in the *orthognathous* category.

The cephalic index being about 75, the skull comes into the *mesati-cephalic* group, and the vertical index being 72·8, it falls into the *metrio-* or *orthocephalic* class. As in the more modern Scottish skulls described by Sir William Turner,¹ the height index falls below the length-breadth index.

The skeleton of the younger person is represented by some fragments of the cranial bones, a portion of the mandible, a humerus, and parts of the femora and tibiae—as well as a portion of the sacrum.

¹ *Loc. cit.*

The bones are so fragmentary that no measurements could be made, but the condition of the epiphyses is such as to fix the age of the individual.

All the epiphyses of the long bones have united with the shafts, but the epiphysal line is still visible superficially at the upper end of the humerus, and at the upper end of the tibia. The bodies of the upper three segments of the sacrum have not yet united together. The mandible is small and delicate, and the third molar has not erupted.

The indications are, therefore, that the individual was about twenty-one years of age—and, as mentioned earlier, the slenderness and delicacy of the bones point to the conclusion that the skeleton is that of a young woman.

An analysis of the data yielded by the examination of the skull of the young adult yields certain conclusions of interest. The fact that it is very probably a female skull must be borne in mind, for the race characters are masked to some extent by the sexual characters in female crania.

Though all the measurements and the indices deduced from them are such as might belong to a skull from the chambered cairns, the general characters are markedly different. The fulness of the frontal bone—the flat vertex without any indication of a sagittal ridge—and the rounded character of the side walls, serve to distinguish to the eye the skull from any of the specimens I have examined from the chambered cairns. The absence of the attrition of the teeth so marked in the earlier skulls even in young persons, points to a higher civilization in the matter of food.

Again, though skulls resembling it in their measurements have been found in short cists, associated with objects belonging to the period of bronze culture, the cranium differs from the *typical* short cist cranium in its low cephalic index, and in the general smoothness of its outlines. It further resembles in general proportions certain of the skulls from the "Danes' Graves," Driffield, Yorkshire, recently described by Dr W. Wright,¹ and referred to the early Iron Age, but in form it does not fall in with any of his types.

¹ *Jour. Anthropological Institute*, vol. xxxiii.

If, on the other hand, it be compared with the skulls collected by Sir William Turner¹ from different parts of Midlothian, which belong to more modern days, it will be seen that there is little to distinguish it from the majority of the crania embraced in his series from the rural and coast districts of the county.

Though the fact that a considerable degree of individual variation is found in all groups of prehistoric skulls, forbids one from making any categorical statement in regard to a single specimen, it may yet be stated that the skull shows rather closer affinities with the modern than with any ancient type of cranium, and that at the time of this interment the general type which prevails at the present time had possibly already been established.

V.

TRACES OF THE CULTUS OF ST FERGUS IN SCOTLAND. By J. M. MACKINLAY, M.A., F.S.A. (LOND. & SCOT.).

We cannot be on terms of intimacy with St Fergus as with St Columba, the former having had no Cumine or Adamnan to supply particulars regarding his daily life. There are, however, some biographical details on record, and it may be interesting to connect these with the traces of his *cultus* in Scotland. For such details we are largely indebted to the lections given in the *Breviarium Aberdonense* under the Saint's festival day—the 17th of November.² If we discount the miraculous element in these lections we find his story verified, as Bishop Forbes indicates, "in almost every point by the dedications of the several churches of his foundation."³

Our saint, who was also known as Fergusianus and Fergustus, is believed by Skene to have belonged to the race of the Scottish Picts.⁴

¹ *Loc. cit.*

² *Pars Estiv.*, fol. 164.

³ *Kalendar of Scottish Saints*, s.v. *Fergus*.

⁴ *Celtic Scotland*, vol. ii. p. 232 n.

though he was for several years a bishop in Ireland. In the *Martyrology of Donegal*,¹ under 8th September, we find the entry "Ferghus Cruithneach," i.e. Fergus the Pict, who is evidently our saint, notwithstanding the difference of his day in the Calendar.

The *Aberdeen Breviary* begins its narrative with an allusion to the residence of St Fergus in Ireland, and then states that, having taken with him a few presbyters and clerics ("paucis secum assumptis presbyteris et clericis"), he crossed to the western parts of Scotland and to the confines of Strogeth, where he led with them a solitary life and laid the foundations of three churches. Next he went to Cathania, i.e. Caithness, and there devoted himself to the conversion of the barbarous natives. After that he settled for a time in Buchan, at a place called Lungley, where he built a basilica which, the writer of the *Breviary* tells his readers, was still in existence, dedicated in honour of St Fergus.

The remainder of the narrative regarding the saint, as given in the *Breviary*, is thus summarised by Bishop Forbes:—"Then, moved by the Holy Spirit, he came to Glammis, where he consecrated a tabernacle for the God of Jacob, and where, full of years, he presignified the day of his death, and, slightly bowing his head, slept in the Lord. His bones, as time passed, became a blessing to the neighbourhood, and a pious abbot of Scone placed the sacred relics in marble, and carried off his head with all due honour to his monastery, where many miracles were performed." A woman with a tumour on her head was restored to health. At Lungley some sick persons keeping vigil in the church beheld a reverend figure in pontificals preparing to celebrate the divine mysteries, which speedily vanished away. On another occasion his bacul, thrown into the waves, caused a storm to cease."²

The question arises, when did St Fergus flourish? Adam King makes him belong to the late fifth and early sixth century. In his Calendar he has this entry under 17th November: "S. Fergus, Bishop and Confessor in Scotland, patron of Glamis under King Conranus A.D. 505."

¹ Page 239.

² *Kalendar of Scottish Saints*, p. 356.

This date is adopted by the Rev. Robert Owen in his *Sanctorale Catholicum*.¹ In the Calendars of Thomas Dempster and David Camerarius we hear more about Conranus and our saint. Dempster has this entry: "November XVII. In Glammes Fergusi pontificis et patroni, qui Conrano regi æquitatis amorem persnasit," and Camerarius this: "18 Die (November). Sanctus Fergusius Episcopus et Confessor. Magno fuit in honore apud Conranum Regem."² Conranus, called by Wyntoun Conrane and Gowran,³ is said by him to have reigned from A.D. 501 to 533 or 534, and to have been a son of Dongard, otherwise Domangart, and a grandson of Fergus, son of Erc. The last-mentioned brought a colony of Scots from the north of Ireland and settled in Southern Argyll in the end of the fifth century. Wyntoun, however, by a mistake in chronology, makes him reign from A.D. 403 to 419 over what is proleptically styled "the realme of Scotland."⁴

There is, however, reason to believe that St Fergus flourished at a considerably later date than the one just mentioned. In A.D. 721 a council was held at Rome under Pope Gregory II., to settle the affairs of the Church, particularly with a view to putting a stop to irregular marriages. Skene remarks: "We find that among the bishops who were present and signed the canons is 'Fergus the Pict, a bishop of Ireland,' who is no doubt our Fergus before he passed over to Pictland in Britain, which appears to have been his native country; and his appearance at the Council of Rome shows that he belonged to the party who had conformed to the Roman Church."⁵ The following, as quoted by Haddan and Stubbs, is the declaration made by Fergus the Bishop at the Council in question: "Fergusus Episcopus Scotiæ Pictus huic constituto a nobis promulgato subscripsi."⁶ Haddan and Stubbs think that Fergus.

¹ Page 451.

² *Calendars of Scottish Saints*, pp. 219, 242.

³ Gabran is another form of the name. For its variants, v. Skene's *Chronicles of the Picts and Scots*, p. 461.

⁴ *The Ormyngton Chronicle of Scotland* (The Historians of Scotland), vol. 1. p. 214.

⁵ *Celtic Scotland*, vol. ii. pp. 232-3.

⁶ *Councils and Ecclesiastical Documents*, vol. ii. part i. p. 7.

though a bishop, was without a diocese—a very reasonable opinion, considering the number of the districts which he evangelised and their separation from one another.

Let us now glance at the traces of St Fergus to be found at Strogeth and the other localities named in the *Aberdeen Breviary*, as cited above.

1. Strogeth is the place now known as Strageath in Muthill parish in Upper Strathearn. There seems to be no trace in local topography of St Fergus himself; but St Patrick, to whom, as we have seen, he dedicated three churches in the district, is represented by such names as Dalpatrick, *i.e.* St Patrick's field—a farm on the other side of the Earn from Strageath—and Dalpatrick ford in the river. These churches were respectively at Strageath, Blairinroar or Blairinroan, and Struthill, all in Muthill parish. At Blairinroar and Struthill there is, or was, a St Patrick's Well; and, as the late Rev. Dr Rankin tells us, some cot-houses at the former place still go by the name of St Patrick's. The site of the ancient church there cannot now be identified, though its foundations were visible in 1837.¹ Regarding the other two places, Dr Rankin says:—"At Struthill both chapel walls and ancient burial-ground remained till about fifty years ago, when they were shamefully turned—the one into dyke material, and the consecrated soil and remains into top-dressing for corn land. The sacred well was also run off into a drain, and the site marked by a modern cattle trough. The burial-ground at Strageath is still in use, but the corner stones of the old church have been abstracted for use in neighbouring buildings."² During the early years of last century the memory of St Patrick was cherished in the district. Writing in 1837, the author of the article on Muthill in the *New Statistical Account of Scotland*³ remarks: "The inhabitants, until very lately, held his memory in so high veneration that on his day neither the clap of the mill was heard, nor the plough seen to move in the furrow."

¹ *New Statistical Account of Scotland* (Perth, p. 313).

² *Chronicles of Strathearn*, pp. 39, 40.

³ Perth, p. 313.

2 *Cathania or Caithness*.—The *Breviary* supplies no information of a topographical kind regarding St Fergus's work among the heathen inhabitants of Caithness; but two places, viz., Halkirk and Wick, seem of old to have been associated with his *cultus*. The Church of Halkirk, according to Cosmo Innes, was originally the chapel belonging to the bishop's residence there, and was, he thinks, dedicated either to St Catherine or St Fergus.¹ The writer of the article on Halkirk parish in the *New Statistical Account of Scotland*² is more definite. According to him, the parish was anciently known as St Fergus. Wick at any-rate was connected with our saint. Its pre-Reformation church, which is believed to have stood near the eastern end of the town, at a place called Mount Halie, was dedicated to him. A stone image of St Fergus stood in the burgh till 1613, but was then destroyed by the Rev. Dr Richard Merchiston of Bower, who was noted for his zeal in abolishing Popish survivals.³

Another stone image at Wick was believed in modern times to represent St Fergus. It is thus referred to in the *New Statistical Account of Scotland*:⁴ "An old image of St Fergus, habited in a monkish dress and standing on some sort of animal, which formerly lay in the church, has now been placed in the jail. Its features are altogether effaced." Dr Joseph Anderson gives quite a different explanation of the effigy. He says:—"The headless image, said to be that of St Fergus, which was long preserved in the courtyard of the county jail at Wick, is a sepulchral effigy of sandstone, many centuries later than the time of St Fergus, and probably lay over the tomb of some local magnate in the old Church of Wick." Dr Anderson adds: "I saw it in August last in the workshop of a local sculptor having a head fitted to it." A well at

¹ *O. P. S.*, vol. ii. p. 758.

² *Caithness*, p. 68.

³ It is said that the inhabitants were so enraged at this that they drowned the minister in the river of Wick when he was returning home. The report was spread abroad that St Fergus himself did the drowning, having been seen astride of the minister and holding him down in the water.—Calden's *History of Caithness*, pp. 186-7.

⁴ *Caithness*, p. 142.

Wick was named after our saint ; and a local fair, held on or about the 24th of November, is still known as Fergusmas.¹

3. *Lungley in Buchan*.—Our saint, as stated in the *Breviary*, settled for a time at Lungley, where he built a basilica. This name appears also as Langley and Longley, but has been superseded since 1616 by St Fergus, applied to a village and coast parish of north-east Aberdeenshire.² Its earlier name was Invergie, *i.e.* the confluence of the Ugie, which flows into the sea between this parish and that of Peterhead. The following topographical facts are given by the Rev. Dr Pratt :—“Five miles from Peterhead we come upon the *New Village of St Fergus*, and at about a quarter of a mile to the left on an eminence the *Kirk* and the *Old Village* are seen peering out among clumps of trees. The church, previous to 1616, stood in the old churchyard near the sea-shore, still used as the burial-ground of the parish, and about two miles eastward from the present edifice.” Dr Pratt adds :—“The old churchyard is a retired and solitary spot in the midst of ‘those pleasant and extensive downs called the Links of St Fergus.’ There are still to be seen fragments of the font and some pieces of rude sculpture which had belonged to the old church. Part of the south wall to the height of several feet still remains, but completely covered outside by the accumulated soil. The area of the church, which is still traceable, shows it to have been a long narrow building.”³ This church was evidently the one mentioned in the *Aberdeen Breviary* as still in existence, *i.e.* in the early years of the sixteenth century,—the successor, it is to be presumed, of our saint’s basilica, not the basilica itself, as stated in the *Breviary*.

¹ *New Statistical Account of Scotland* (Caithness, p. 176).

² The Rev. Dr Pratt remarks :—“The parish of St Fergus, though locally situated in the county of Aberdeen, is, by a feudal peculiarity, reckoned to be in Banffshire, having, it is said, been annexed at a very early period to the latter county by an Act of the Legislature, obtained through the influence of the Cheynes, the hereditary sheriffs of Banff, who were naturally desirous to have their family domains within their own jurisdiction.”—*Buchan*, pp. 163-4.

³ *Buchan*, pp. 162-3. The Church of Invergie was bestowed on Arbroath Abbey by Ralph de Noyon early in the thirteenth century, *c. Trans. Buchan Field Club*, vol. i. p. 90.

4. *Glamis*.—The Forfarshire parish of Glamis seems to have been specially identified with St Fergus. In the *Aberdeen Breviary* the 17th November is given as the festival of St Fergusian, bishop and confessor—the distinguished patron of Glamis ("Sancti Fergusiani Epyscopi et confessoris patroni insignis de Glamis"); while in the *Martyrology of Aberdeen*, under date "XVII Kl' Decembris," we read: "On the same day in Scotland at Glamis, St Fergus, the bishop, flourishes" ("Eodem die in Scotia apud Glamis floret Fergusius episcopus Sanctus").¹ The church dedicated by Bishop David de Bernham in 1242 was, according to Jervise,² cruciform in shape. Its south transept—the only portion remaining—now forms the burial aisle of the Earls of Strathmore. In the parish is a cave associated with St Fergus, and a spring bears his name. Regarding the latter, Mr A. J. Warden remarks: "A fine spring, rising from a rock a little below the church in the lower part of the den of Glamis, is still known as St Fergus's Well. The fountain is within the grounds of Glamis Castle, and the Earl of Strathmore has formed a path leading to it, and provided the means for partaking of the cooling and refreshing water of the perennial spring."³

Bishop Forbes mentions that the statement in the *Aberdeen Breviary* that an Abbot of Scone carried off St Fergus's head to his monastery is confirmed by an entry in the *Accounts of the Lord High Treasurer* regarding a silver case for it ordered by James IV.⁴ This entry, however, I have failed to find in the *Accounts* in question; but the following entry occurs under date 11th October 1501. "Item to the Kingis offerand to Sanct Fergus hede in Scone xiiijjs." Two years later, on the 27th September, the King made an additional offering of eighteen shillings.⁵ The Abbots of Scone were, *ex officio*, prebendaries of the Cathedral of Caithness. Was it some tradition of St Fergus's work in

¹ *Proceedings of the Society of Antiquaries of Scotland*, vol. ii. p. 271.

² *Antiquities of Glamis*, p. 5, and *Epitaphs*, vol. i. p. 150.

³ *Angus*, vol. iii. pp. 306–307.

⁴ *Kalendar of Scottish Saints*, p. 337.

⁵ *Accounts*, vol. ii. p. 265; vol. iii. p. 283.

the North that induced this particular Abbot to treat with such respect the relics of our saint?

In an Inventory of books and other valuables belonging to the Cathedral Church of Aberdeen in 1464, the following occurs:—"Item brachium argenteum Sancti Fergusii cum ossibus ejusdem,"¹ *i.e.* the silver arm of St Fergus with the bones of the same. This was a reliquary in the form of an arm, and probably resembled one in the Church of Tongres in Belgium, of date *circa* 1300, representing the arm and hand of St Lawrence from the elbow upwards.² From a visitation of the Treasury of Aberdeen Cathedral in 1518 we learn that the reliquary containing the arm-bones of St Fergus was adorned with precious stones. In an Inventory of Cathedral valuables in the year 1549 the following entry occurs in what is certainly not Ciceronian Latin:—"Brachium diui Fergusiani argento co-opertum absque hostiolo cum aliquibus lapidibus sed quales ignoratur ponderis octodecim vnciarum cum dimediata creditur deuotione populi aut rectoris de Skeyne aut Dyise donatum."³ This entry may be thus translated:—"The arm of St Fergus covered with silver without the hostiolum (whatever that was), with certain stones, but of what kind is not known, of weight eighteen ounces and a half. It is believed to have been given by the devotion of the people or of the rector of Skene or of Dyce." That the rector of Dyce should have been interested in the *cultus* of our saint is not surprising; for the latter was patron of its church. Indeed, the parish of Dyce was formerly known as the Chapel of St Fergus, near Moss-Feetach.⁴

In the estuary of the South Esk, near Montrose, is Inchbrayoch, where once stood the Church of St Brioc. Dependent on the church were two chapels, said, according to Jervise, to have been dedicated to St Mary

¹ *Registrum Episcopatus Aberdonensis*, vol. ii. p. 160.

² This reliquary is described and figured by Reusens in his *Éléments d'Archéologie Chrétienne*, vol. ii. p. 373. St Columba's hand was kept in a gold and silver reliquary. *Vide* Skene's *Celtic Scotland*, vol. iii. p. 404.

³ *Registrum Episcopatus Aberdonensis*, vol. ii. p. 182.

⁴ *Old Statistical Account of Scotland*, vol. xiii. p. 81.

and St Fergus.¹ "There was also S. Fergus' well, and in the old maps S. Fergus marked the burial-place of the Scotts of Ulishaven."²

The Inverness-shire parish of Dalarassie, now united to Moy, is thought by Shaw³ to be an altered form of Dale Fergusie, which he interprets as Fergus's Valley, though it ought rather to be Fergus's field, from Gaelic *Dail*, a field or portion of land. Jervise is inclined to accept Shaw's etymology, and to hold that St Fergus was the patron of the pre-Reformation church. In Kirkmichael parish, Banffshire, is Knockfergan, *i.e.* the hill of St Fergus, from Gaelic *Cnoc*, a hill. On its south-east side is Fergan Well, formerly much frequented for its supposed healing virtues. An annual fair, known as the Well Market, used to be held beside the spring. On one occasion a fight took place about a cheese, and in consequence the market was transferred to the neighbouring village of Tomintoul, where it continues to be held. The foundations of the booths for the sale of goods at the fair were visible till quite lately in the neighbourhood of the spring. According to a curious tradition, Fergan Well was once in Italy, but was miraculously transferred to its present site in the Highlands of Scotland. Does not this tradition point in a confused way to St Fergus's visit to Rome when he attended the Council there in 721? There is a Loch Fergus in Ayrshire, and there was another, now drained, in Kirkcudbrightshire: but probably neither derived its name from our saint. The Kirkcudbrightshire example, according to Sir Herbert Maxwell,⁴ recalls Fergus, Lord of Galloway in the twelfth century, who had a castle on an island in the lake.

¹ *Proceedings of the Society of Antiquaries of Scotland*, vol. ii. p. 459.

² *Kalendar of Scottish Saints*, s.v. *Fergus*.

³ *Province of Moray*, p. 97.

⁴ *Studies in Galloway Topography*, p. 241.

VI.

ON JULIUS VERUS, A ROMAN GOVERNOR OF BRITAIN.

By F. HAVERFIELD, Hon. F.S.A. Scot.

In 1895 the Society excavated the Roman fort of Birrens (Blatobulgium) in Annandale. Among other objects then discovered were some fragments of a large inscribed slab, found some near to, and others in, the well of the so-called "praetorium." Although imperfect, the text of the inscription could easily be restored, except one name in the last line, as follows:—

*Imp(eratori) Caes(ar)i T. Ael(io) Hadr(iano) Antonino Aug(usto) Pio,
pont(ifici) max(im)o tr(ibunica) pot(estate) xxi, co(n)s(uli) iv, coh(ors) ii
Tungr(orum) mil(itaria) eq(uitata) c(ivium) L(atinorum), sub Iu
leg(ato) Aug pr(o) praetore)*

In brief: "Erected in honour of the Emperor Pius in A.D. 158, by the First Cohort of Tungrians, under Ju, governor of Britain." The date, which was at first read xvi, that is A.D. 153, is really A.D. 158, as Dr Macdonald afterwards pointed out.¹

The name of the governor, which could not be supplied in 1896 or 1897, has been revealed by a discovery made in 1903. In August of that year a singularly perfect slab was extracted from the river Tyne at Newcastle, close to the site of the Roman bridge and the modern swing-bridge. This slab states that it was erected in honour of the Emperor Pius, by a draft or drafts of the three British legions, II Augusta and VI Victrix and XX Valeria Victrix, sent over specially (*contributi*) from Germany, under Julius Verus, governor of Britain.² The inscription possesses certain features of technical interest, into which I need

¹ *Proc. of the Soc.*, 10th February 1896, vol. xxx. p. 128; Macdonald and Barbour, *Birrens and its Antiquities*, reprinted with additions from the *Transactions* of the Dumfriesshire Antiquarian Society (Dumfries, 1897), p. 65. I may add that in expanding and Englishing this text we can read either "in honour of" or "in the reign of."

² Illustration in *Proc. of Newcastle Soc. of Antiquaries*, third series, i. p. 72.

not here enter. The point which matters is that it enables us to supply *sub Julio Vero* in the last line of the Birrens inscription.

The Birrens stone is not the only one which thus receives its completion. Two others are similarly helped. One is a slab found, almost at the same moment as the Newcastle slab, in the Roman fort of Brough (Anavio) in Derbyshire, between Buxton and Sheffield. This slab, though much broken, seems to have been erected in honour of the Emperor Pius by the First Cohort of Aquitani, under Julius V[erus], and under the direct orders of Capitonius Fuscus (or other similar names), praefect of the cohort. The other is a fragment found long since at Netherby in North Cumberland, and now in the Carlisle Museum. It seems to record the erection of a building in the reign of some Emperor Antoninus, and the governorship of one G. Jul The lettering suits the time of Pius, and, with the other stones before us, we may think to have here a fourth mention of Julius Verus.¹

We possess, therefore, no less than four epigraphic references to Julius Verus, at Brough in Derbyshire, the Tyne at Newcastle, Netherby in North Cumberland, and Birrens in Dumfriesshire. Can any historical facts be connected with them? Some explanation certainly is needed. The Brough and Netherby stones might, indeed, be disposed of as mere records of building or rebuilding, such as must occur from time to time in every fort. But the *contributi* from Germany, named on the Tyne inscription, must be something special, and I have always thought that the Birrens inscription, found in the "praetorium" and indicative of building and perhaps even of foundation, required some justification of its particular date. Beside, we have now as many as four stones which mention Julius Verus.

I do not profess to be able to give any certain answer to this question. But I think that a not improbable answer may be adduced. It will be

¹ Lapidarium 777, Corpus vii. 777. Hubner referred the fragment to the time of Caracalla, and in my Catalogue of the Carlisle Museum (No. 79), I was inclined to accept some such date, as there was a governor Modus Julius in that period. But Verus suits much better.

observed that the stones all occur in, or nearly in, the territory of the Brigantes. The exact limits of that territory are, of course, not precisely known. But it is plain from Ptolemy that it included Cumberland and Durham, Lancashire and Yorkshire, and it probably extended a little north and south of these limits. On the north, Ptolemy tells us, the Brigantes marched with the Otahni of North Northumberland and with the Selgovae who held Trimontium (Melrose) and who may be connected with the Selkirk region.¹ On the south they marched with tribes inhabiting the English midlands. Moreover, we have some numismatic and epigraphic evidence. A hoard of coins found in 1893 at Honley near Huddersfield seems to contain Brigantian coins.² A pig of lead of Domitian's reign, found in 1734 near Ripley in the West Riding, bears the letters BRIG, and if this means (as is usually held) *plumbum Brigantirum*, the Derbyshire lead-mines may have been within the Brigantian area. Moreover, we have inscriptions of a goddess Brigantia—or some similar name³—and these inscriptions occur just in the area of the Verus inscriptions. The most northerly come from Birrens and South Shields at the mouth of the Tyne; the most southerly from the vicinity of Leeds and Huddersfield. They seem to provide fair evidence that the territory of the Brigantes was very much what I have described. Tacitus calls the tribe "the most populous in all Britain" (*Agricola* 17), and we should expect to find its lands stretching far and wide.

The activity of Verus, then, belonged to the territory of the Brigantes.

¹ Usually they are connected with Solway. But I think Mr Neilson has proved satisfactorily that Solway is an English name. Can Ptolemy's Ἐπίακον (vv. 11. Ἐπείακον, Ἀπίακον) be *Habitacum*? It certainly is not Keswick, with which Holder strangely identifies it.

² *Numismatic Chronicle*, 1897. p. 293. See also Evans' *Ancient British Coins*, p. 404.

³ These have been found at Birrens (now in the National Museum at Edinburgh, *CIL*. vii. 1062); at a place not exactly known on the Roman Wall in East Cumberland (*C.* vii. 875); at South Shields (*Proc. of the Society of Antiquaries of Newcastle*, second series, vii. 41); at Adel near Leeds (*C.* vii. 203); at Slack near Huddersfield (*ibid.*, 200 and *Ephemeres*, vii. 920); and at Woodnook near Castleford (*Archaeol. Journal*, xlx. 191, No. 100). Two of these are dated A.D. 203-205, the rest are undated.

With this we may connect a statement in Pausanias (VIII. 43) to the effect that "the Emperor Pius annexed the larger part of the territory of the Brigantes because they made an armed attack on the 'Genounian Moira,' which was subject to Rome." The statement is not quite satisfactory. No date is given for the action; the "Genounian Moira" (τὴν Γενουνίαν Μοῖραν), too, is unknown. The best suggestion, that it refers to *Vimoriun* (Binchester, in Durham county), is not at all probable, and the name itself is so odd that Whitley Stokes declares it not to be Celtic but Pictish. Nor is the action of Pius quite intelligible. Hadrian built a wall from Tyne to Solway and thereby placed the largest part, if not the whole, of the Brigantian territory within the Roman frontier. Strictly speaking, there should therefore be no talk of Pius annexing their land. But it is possible that, although they were included within the Roman boundary-line, they were yet allowed some kind of local autonomy, and that the action of Pius consisted in a suppression of this. Such suppression would mean that the territory passed under the direct Roman administration, and the word "annexed" (ἀπετέμετο) might perhaps be reasonably employed to denote it. I should then be inclined to think that the activity of Verus consisted in subduing the semi-independent Brigantes, and in planting or restoring forts in suitable places to hold them down. One such fort is in Derbyshire. Others are in the naturally less quiet regions of the north. Others again are doubtless unknown to us—though scanty bits of evidence drawn from coins and the like may tempt us to think that some other South Brigantian forts, like Templeborough and Melandra, were actively occupied about the period in question. If this be so, we obtain from our four inscriptions the dating and description of a hitherto practically unknown war, and some light is cast on the history of Roman Britain in the middle of the second century.

Of Verus himself little else is known. He was governor of Syria about A.D. 161-5—a fact which agrees well with his British governorship about A.D. 158, since at that period it was not unusual for the same man, late in his career and when thoroughly experienced, to govern

first Britain and almost immediately afterwards Syria. He may be an unknown officer mentioned on a broken inscription found at *Æquum* in Dalmatia (C.I.L. iii. 2732). The man's name is lost: he held first a row of minor offices, and finally the governorships, in succession, of Germany, of Britain and of Syria, and he certainly lived somewhere in the beginning or middle of the second century. Dessau, however, points out that Julius Verus governed Syria under the joint reign of Marcus and Verus, while the unknown's titles do not betray any sign of a joint reign.¹ The identification must therefore remain doubtful.

Since the preceding paragraphs were written, Dr Emil Ritterling has contributed a note on the same subject to the "Korrespondenzblatt" of the *Westdeutsche Zeitschrift* (xxii. 93). He agrees generally with what I have said above as to Julius Verus, and produces strong and new reasons for identifying him with the soldier of the Dalmatian inscription. He differs from me in respect of the history. Pausanias (he thinks, or implies) must refer to the campaign of Lollius Urbicus in A.D. 142, when the Vallum was built from Forth to Clyde. On the other hand, he assigns the bridge inscription from the Tyne to some more or less elaborate work connected with Hadrian's Wall between Tyne and Solway. He finds another reference to this supposed work in a building inscription (C. vii. 563) found on this wall in 1752, apparently between Rutchester and Benwell (British Museum MS. Add. 6210, fo. 33, 34), and dated to A.D. 158. As a conjecture, he suggests that this work may be the construction of the Turf Wall discovered lately by myself and my companions in excavation on the line of Hadrian's Wall.

I regret that I cannot agree with most of this. The work of Lollius Urbicus in 142 was, as far as we know, confined to the region of the Vallum of Pius, and lay wholly outside the territory of the Brigantes. A war against the Brigantes must have been something quite distinct, as Mommsen rightly saw (*Römische Geschichte*, v. 172). Further, it is to be observed that Julius Verus, in all his four appearances, occurs off

¹ *Psephographia*, in. p. 498: *Inscr. Selectae*, 1057.

the line of Hadrian's Wall. If he carried out a systematic reconstruction of the frontier defences of the Wall, we should expect to meet him oftenest on that Wall. As it is, we meet him once many miles away from the Wall, and three times in its neighbourhood, but never actually on it. Nor does evidence exist for any systematic reconstruction of the Wall in 158. The one inscription cited by Dr Ritterling stands alone. That incidental repairs were executed under Pius, as under other emperors, is likely enough. That the Brigantian fighting involved the Wall is also likely. More than this seems neither provable nor probable.

I may be excused from here entering on the problem of the Turf Wall. It is complex, and it does not necessarily concern the question before us. But I may say that, when Dr Ritterling attributes the Turf Wall to A.D. 158, he conflicts, by implication, with recent English results. In order to find a wall for Hadrian, he has to suppose the Vallum anterior to the Turf Wall and to assign the Vallum to Hadrian. This is in flat contradiction to the discoveries made since 1895 on the line of Hadrian's Wall. It is natural enough for a German scholar to consider Vallum, Turf Wall, and Stone Wall as three successive works. He is led to assume this by the fact that on the Romano-German frontier the various lines of work seem to be successive defences, constructed one after the other. But in Britain the Vallum seems to be an exception to that condition of things, just as, in its form and shape, it is an exception to ordinary frontier defences.

VII.

NOTE ON A LATE CELTIC ARMLET OF BRONZE NOW PRESENTED TO THE NATIONAL MUSEUM; WITH NOTES ON THE IDENTIFICATION OF TWO OTHER LATE CELTIC ARMLETS IN THE MUSEUM. AND ON A MASSIVE BRONZE ARMLET RECENTLY FOUND IN SUTHERLANDSHIRE. BY JOSEPH ANDERSON, LL.D., ASSISTANT SECRETARY AND KEEPER OF THE MUSEUM

The presentation to the Museum by the daughters of the late General Sir John Macdonald of a Late Celtic armlet, in the form of a serpent spirally twisted, which was found in Rannoch before 1833, helps to clear up the history of two other armlets of the more massive form (with expanded ends containing sockets for enamel plaques), the localities of which had been lost and conjecturally restored, but erroneously, so far as at least one of them is concerned

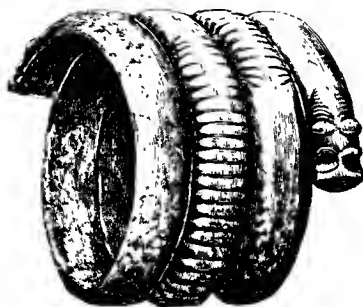


Fig. 1 Late Celtic Armlet found at Buhrannoch. (3.)

The armlet now presented (fig. 1) is formed of a band or bar of bronze of a uniform width of about $\frac{1}{2}$ inch, and fully $\frac{1}{4}$ inch in thickness in the middle, bent into the form of a cylindrical spiral of $3\frac{1}{2}$ turns, the exterior surface of the band being boldly rounded and the interior flattened. The diameter of the circular opening of the armlet is $2\frac{7}{8}$ inches, and the transverse internal measurement across all the coils is $2\frac{5}{16}$ inches. The whole length of the band or bar of bronze of which

it is made, if straightened out, is $31\frac{3}{4}$ inches. The middle part for a length of $10\frac{1}{4}$ inches (or $5\frac{1}{8}$ on either side of the centre) is ribbed transversely on the convex exterior of the bar, and the conventionalised heads at either end, which are about $\frac{3}{4}$ inch in length, are boldly modelled, with very prominent eyes. The weight of the armlet is exactly 1 lb. 2 ozs. avoirdupois. It is similar in form and design to the armlets found at Pitalpin near Dundee (fig 2), and at Grange of Conan, near Arbroath, which are now in the Museum. These, and two

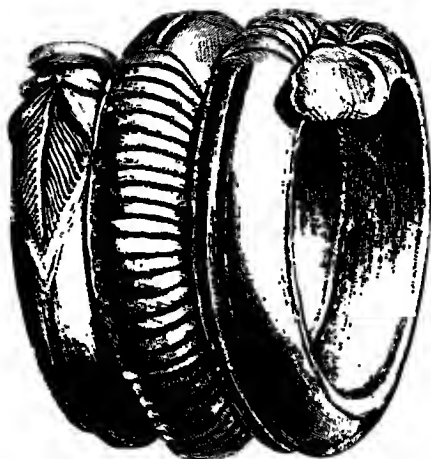


Fig. 2. Late Celtic Armlet found at Pitalpin. ($\frac{1}{2}$.)

others—all that are known of this particular snake-like variety of bronze armlet—have been described and figured by Dr John Alexander Smith in a paper on Late Celtic Bronze Armlets.¹

In a letter accompanying the presentation, and dated Barnfield, Hill, Southampton, June 18th, 1903, Miss E. Macdonald gives the following particulars of the discovery of the armlet:—"As far as I know, this bracelet was found in Rannoch, at the foot of Schiehallion, along with a similar one and some other smaller articles, in a vessel of some kind

¹ *Proceedings*, vol. xv. p. 344; see also *Scotland in Pagan Times, The Iron Age*, p. 156.

which was broken to pieces at the time of the finding. The bracelet was subsequently given to Colonel John Macdonald of Dalchosnie, afterwards General Sir John Macdonald. The date of finding must have been somewhere between 1820 and 1830. At that time the property on which the find occurred belonged to a Stewart, Sir John's first cousin."

The find of two Late Celtic armlets at Bunrannoch before 1833 is referred to by Dr John Alexander Smith in his description of the armlets of this character in the Museum, printed in the *Proceedings*, vol. xv. p. 337, where an armlet of the massive kind is described and figured as the specimen presumably found with this one, and another of the same kind is described and figured which was presumed to be this one.

There can now be little doubt, however, that one of the two armlets thus described by Dr Smith did not come from Rannoch, but from Stitchell in Roxburghshire. Since the time when he wrote, the publication by the Scottish History Society of Bishop Pococke's *Tours in Scotland*, edited by Mr D. W. Kemp, has thrown further light on the matter. It shows, at p. 331, a drawing of an armlet of this kind made by Pococke in 1760, when the armlet was in the possession of Sir Robert Pringle at Stitchell House. The drawing is somewhat crude, but from certain characteristics which it gives, and which are possessed by none of the armlets known to be in existence except the one in question, there can be no doubt of its identity. Pococke's description of it as being much worn towards the broad part at one end, and only a little at the corresponding part on the same side towards the other expansion, also corresponds with these special features of the armlet itself. He mentions that half of another armlet also found with it is worn on the same sides. This apparently means that two of these armlets were found together, and he adds that they were found "three feet under ground in digging a well," at Stitchell. The half armlet is not now known to exist. The Stitchell armlet (fig. 3) measures $4\frac{1}{2}$ inches in greatest diameter, 2 inches in the width of the band across the middle, and $3\frac{1}{4}$ inches in the width of each of the expanded extremities, the oval perforations in the expansions measuring $1\frac{1}{4}$ inches in the longest diameter. The weight of the armlet

is $21\frac{1}{4}$ ounces, and its rounded extremities appear to have been partially pared away.

The other armlet, here shown as fig 4, and represented by Dr Smith as fig. 17 (*Proceedings*, vol. xv. p. 337), is undoubtedly the armlet found in Rannoch, along with the one here shown as fig. 1, and now presented by the daughters of General Sir John Macdonald. It is entered in the catalogue of the Museum printed in 1849 as an "Antique Bronze Armilla in form of a snake, found in the district of Bunrannoch, Perthshire, on the northern declivity of Schiehallion." Although only one armlet from Bunrannoch is entered in the catalogue of the Museum of 1849, and nothing is said of its having been one of the two which were found together, it is fortunate that this fact can be established from the Society's records, for the two



Fig. 3. Late Celtic Armlet found at Stithell. (4.)

had been exhibited together at the meeting of the Society held on April 22nd, 1833, as appears from the following entry in the minutes of that date: "There were also exhibited two bronze bracelets or armlets in the form of serpents, the one weighing 1 lb. 2 oz., the other 1 lb. 14½ oz. avoirdupois. These armlets were found in the district of Bunrannoch, Perthshire, on the northern declivity of the mountain Schiehallion, and were exhibited to the Society, and temporarily deposited in the Museum, by Mr Alexander Stewart, Edinburgh."

The weight of the armlet now presented to the Museum being exactly 1 lb. 2 oz. avoirdupois, there can be no doubt of its identity with one of the armlets exhibited in 1833 and temporarily deposited in the Museum by Mr Alexander Stewart. In all probability this armlet was subsequently withdrawn and given to Sir John Macdonald, while the larger

armlet remained in the Museum, as testified by the entry in the catalogue of 1849. It is there described as being "in form of a snake," and though not so obviously serpentiform, it differs from the majority of the massive armlets of its class in presenting the appearance of a snake-like band, folded in opposite directions against the middle part of the body. There is indeed a discrepancy in the weight, which is given in the minute-book as 1 lb. 14½ oz. avoirdupois, whereas the armlet actually weighs 1 lb. 15¾ oz. avoirdupois. However this may be accounted for,

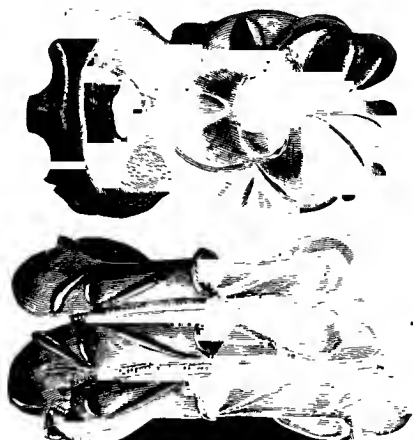


Fig. 4. Late Celtic Armlet found at Bunrannoch. ($\frac{1}{3}$.)

there is no question that in 1849 there was one of the Rannoch armlets in the Museum, which then possessed only two armlets of this class. They are described by Dr Daniel Wilson in the first edition of his *Pre-historic Annals of Scotland* (1851), p. 448, as being then in the Museum, without definite localities, but as one of them is figured, it is recognisable as the one which Dr Smith also figured as from Bunrannoch. Its weight is given by Dr Daniel Wilson as fully two pounds avoirdupois. The other, which is described as slightly smaller, was believed to have been dug up in Argyllshire, on what evidence Dr Wilson does not say, but as its dimensions, as given by him, correspond with the measurement of the armlet figured by Bishop Pococke and seen by him at Stitchell

in 1760. there can be no doubt that the two armlets in the Museum 1849-51 must have been these two, and that the larger came from Rannoch and the smaller from Stitchell.

There is in the Museum another Late Celtic ornament of bronze from Stitchell, which was presented in 1782 by Sir James Pringle of Stitchell, the son and successor of Sir Robert Pringle, who entertained Bishop Pococke in 1760. It is a massive collar of cast bronze formed in two moieties, jointed in the middle so as to open on a hinge in the back, and fasten in front by a pin and socket. The width of the slightly oval



Fig. 5. Late Celtic jointed Collar found at Stitchell. ($\frac{1}{4}$.)

opening is 6 inches one way and 5 inches the other, the breadth of the flattened ring being $1\frac{3}{4}$ inches in the middle of the front. In the minute-book of the Society in which the presentation is entered, at June 25th, 1782, it is described as "an ancient Roman cestus of brass, discovered in the year 1747, when digging for a well, about 7 feet below the surface at the east end of the village of Stitchell." It is accordingly entered in the catalogue of the Museum of 1849 in the "Roman" section, while the other two armlets are entered under the "Bronze Period." The characteristics of the form and ornamentation of the

collar, however, leave no doubt that it belongs to the Late Celtic, and not to the Roman group of relics. The evidence does not suffice to show whether this well which was being dug at the east end of the village of Stitchell in 1747, was the same well out of which the armlet seen by Bishop Pococke in 1760 came. But the probabilities appear to be against the view that there were two finds from two different wells, and perhaps Pococke's reference to the half of another armlet may be explained by the fact that this collar is jointed in the middle, and one-half of it may have been shown to Pococke.

MASSIVE BRONZE ARMLET FROM ROGART IN SUTHERLAND.

In the present connection there is an opportunity of putting on record the recent discovery of another of the massive bronze armlets of the Late Celtic period at Rogart in Sutherland (fig. 6), which has been communicated to me by Rev. Dr J. Joass, Golspie. It was found in April 1901 in ploughing a field on the croft of Achavral, in the parish of Rogart. The crofter noticed it on the coulter of the plough, and threw it aside at first, but subsequently bethought him that it might have some interest for the Sutherland Museum at Dunrobin Castle, and brought it to Dr Joass "as some sort of old curtain-ring." It is of the transition variety, which assumes a conventional serpentine form, the band being folded in opposite directions against the middle of the body, and terminating abruptly at each side a little short of the commencement of the swelling of the bend to form the loop round the opening in the centre of each rounded end of the penannular armlet. It thus resembles the similar armlet from Bunnaneoch, and also the one from Seatfield, near Kinghorn, and makes the third of this particular variety found in Scotland. The ornamentation is of the same general character of design and execution which is peculiar to this class of bronze armlets. As in the majority of cases, the enamel plaques which presumably filled the circular perforations have perished. The weight of the armlet is $28\frac{1}{2}$ oz. avoirdupois.

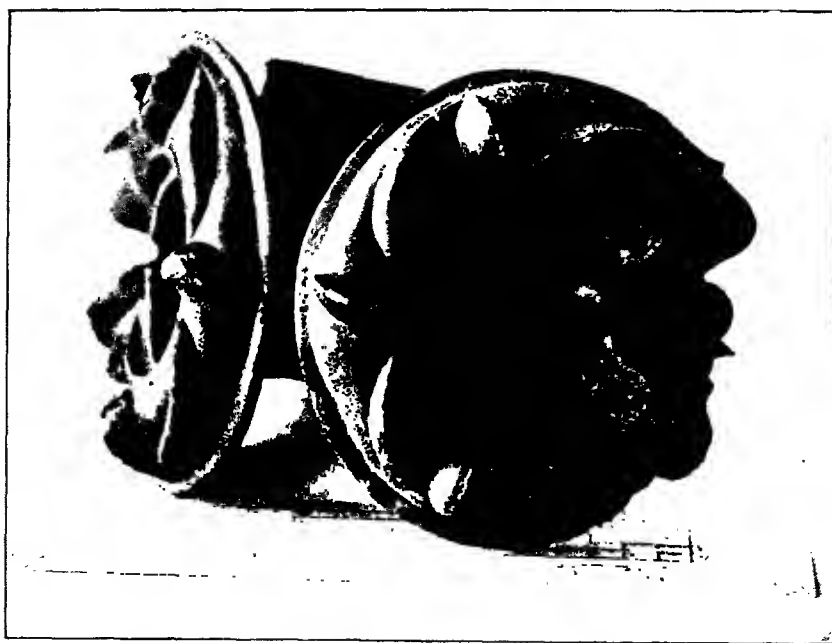
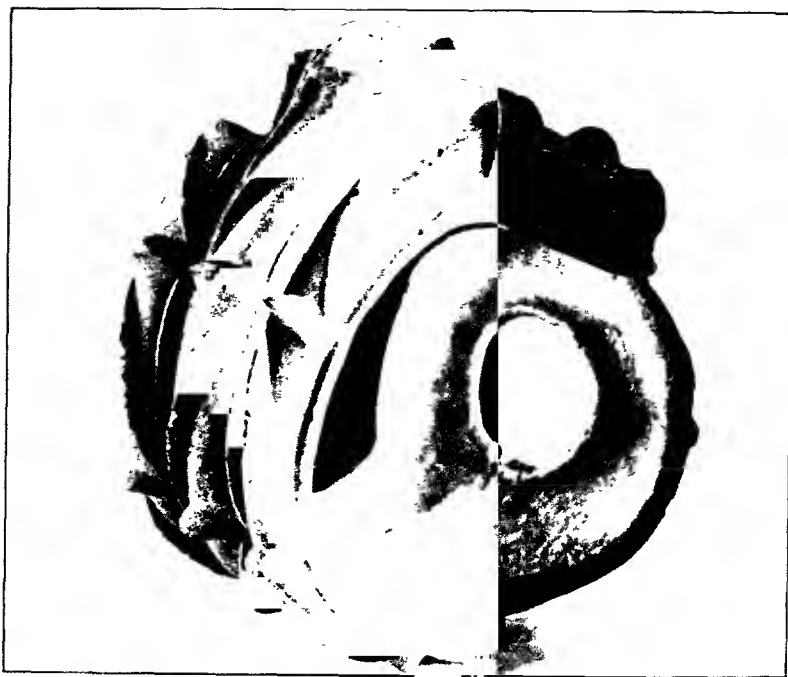


Fig. 6. Bronze Armlet found near Rogart, Sutherland. (3) (From a photograph by A. M. Dixon, Golspie.)

MONDAY, 9th May 1904.

Mr GILBERT GOUDIE in the Chair.

A Ballot having been taken, Mr ALEXANDER MACKIE, Clerk of Works, Abernethy, recommended by the Council, was elected a Corresponding Member of the Society.

The following were duly elected Fellows :—

Sir MATTHEW ARTHUR, Bart., of Carlung, Fullarton, Troon.

EDWARD J. BROOK, of Hoddam Castle, Ecclefechan.

Rev. JAMES STEEL, D.D., Vicar of Howorth, Newcastle-on-Tyne.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors.—

(1) By LUDOVIC McLELLAN MANN, F.S.A. Scot.

Two *Tribula*, or Threshing-Sledges of wood, having their under surfaces studded with rows of chipped flints, for threshing corn on a threshing-floor, from Cavalla, in European Turkey. (See the subsequent Communication by Mr Mann.)

Three Oval Trimmed Flakes of Quartz, which the donor saw made at Broussa as “teeth” to be mounted in a *tribulum* or threshing-sledge : and one similar Flake of Flint from Xanthi.

(2) By J. M. MACKINLAY, F.S.A. Scot.

Influence of the Pre-Reformation Church on Scottish Place Names. 8vo. 1904.

(3) By ROBERT MUNRO, M.D., LL.D., *Vice-President*, the Author.

Man as Artist and Sportsman in the Palæolithic Period. Reprint from the *Proceedings* of the Royal Society of Edinburgh.

(4) By the FRANCO-SCOTTISH SOCIETY.

Transactions of the Franco-Scottish Society. Vol. iii., Part 2.

- (5) By J. T. WALKER, Senator for Sydney, N. S. Wales, through JOHN HUME, London.

Photographic copies of the Charters of East and West Reston to George Achincralb, of which type-written copies were previously given by Mr John Hume, as noticed in the present volume at p. 254.

The following articles acquired by the Purchase Committee for the Museum and Library during the session, 30th November to 9th May, were also exhibited :—

A Flint Knife and Seraper, ten Whorls, and three pierced Stones, from Hawick.

A Collection of Flint Implements, from Low Mye, Stoneykirk.

Urn, of food-vessel type, from a cist at Rosemarkie. The urn (fig. 1) is 6 inches in height and $6\frac{1}{2}$ inches in diameter across the mouth,

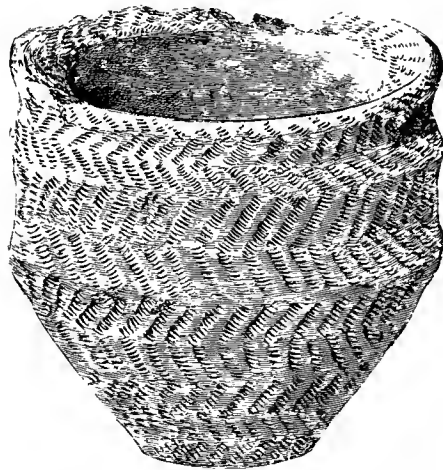


Fig. 1. Urn of food-vessel type found in a cist at Rosemarkie. A.

widening slightly to the shoulder moulding about 3 inches underneath the rim. The rim is slightly everted and bevelled towards the interior, and there is a slight moulding nearly half-way between it and the

shoulder. From the shoulder the under part slopes regularly to the base, which is 3 inches in diameter. The whole exterior surface is covered with a chevrons ornamentation, as with the teeth of a comb-like instrument, the markings being about an inch in length, fully $\frac{1}{8}$ inch in breadth, and having about 17 tooth-marks in that space. The interior bevel of the lip is also ornamented in the same manner. It was found in a cist which was discovered in digging a drain in the grounds of the Manse at Rosemarkie last autumn. The cist was about 3 feet long by 26 inches wide at one end and 23 inches at the other, and about 30 inches deep. The cover was a large boulder stone, 4 feet 6 inches in length, from 3 to 4 feet in width, and about a foot thick. The sides and ends of the cist, which lay nearly north and south, were rough flat-sided boulders of whinstone. The interment was unburnt, and the urn was in the south end of the cist. The site of the grave was on the top of a rising ground facing the Moray Firth. The circumstances of the find were kindly communicated by Rev. J. Macdowal, Minister of Rosemarkie, and the urn was recovered by the King's and Lord Treasurer's Remembrancer.

Stone Ball, $2\frac{1}{2}$ inches in diameter, with four slightly projecting discs, found on the top of Ben Tharson, Ardross, Ross-shire.

Two Crampits of Leather, with long spikes in the soles, worn by shepherds in winter, from Killin.

Silver Badge Prize, of the Académie Française de Le Brun, Edinbourg, 1780.

A Sewed Sampler, in frame, dated 1853.

A Collection of Stone Implements, chiefly from Aberdeenshire and Banffshire, comprising—11 Stone Axes: 1 perforated Hammer; 3 Stone Balls, with projecting discs: 54 Flint Arrow-heads, with stems and barbs: 100 Arrow-heads, of leaf and lozenge shape: and 2 hollow-based Arrow-heads: also 16 large oval Flint Implements from Montana, United States.

Ancient Scottish Harp, long in possession of the family of the Robertsons of Lude, and afterwards of the Stenarts of Dalguise. This

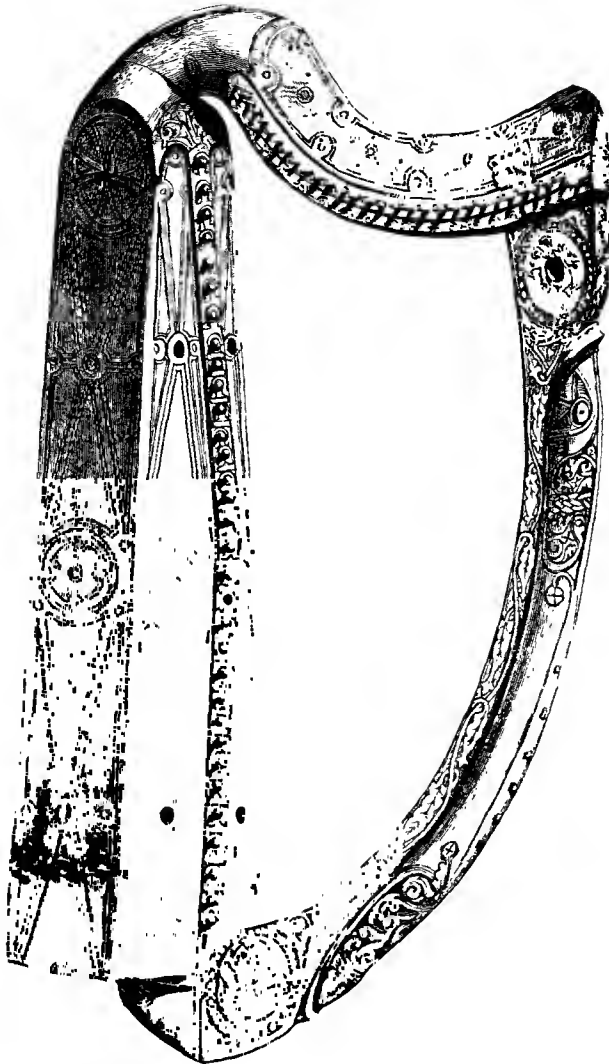


Fig. 2. The Dalgwise Harp.

fine example of the ancient Scottish harp, which, with another of larger size and less elaborately ornamented, has been exhibited on loan in the Museum since 1880, was acquired at the Dalguise sale in March last. It has been previously figured and described by the late Charles D. Bell, F.S.A. Scot., in the *Proceedings*, vol. xvi., and the illustration of the harp and a summary of the description are here repeated:—

The length of the harp (fig. 2) is 31 inches, and the extreme breadth 18 inches. The sounding box, which is hollowed out of the solid, is 5 inches wide at the top and 12 inches at the bottom, with a thickness of $4\frac{1}{2}$ inches, and has a swell of front from ends and sides to the middle of the string-hole band of $1\frac{1}{4}$ inches. The string-hole band is pierced by 29 holes, each of which is protected on the upper side by a horse-shoe-shaped brass border.

The upper arm of the harp, which carries the pins for the strings, has a peculiar double curve, altering in section from oval at the junction with the top of the box to triangular at the outer extremity. It is strengthened on each side by a brass band $\frac{3}{4}$ inch in width, pierced by 29 pin-holes, in each of which is a pin. There is an additional pin-hole below the line of the others in front, in which there is a shorter pin.

The bow or front of the harp rises 4 inches from the chord of the arc of the inner curve, which measures 23 inches. The flat part at the upper insertion measures $3\frac{1}{2}$ inches by $1\frac{1}{4}$ inches, and the corresponding part of the lower insertion $3\frac{1}{2}$ inches by 2 inches in width and thickness. The front of the middle portion has a rounded swell, ending both ways in boldly carved heads of animals, and the projecting block at the bottom of the box against which the lower end of the bow is fixed is also carved into the similitude of an animal's head.

The ornamentation on the box and upper arm of the harp consists of geometrical patterns of lines, circles, and crosses, except on the upper part of the front of the box (fig. 3), where there is a fine semicircular panel of foliaceous ornament. The right and left sides of the bow or front of the harp have each near the upper and lower ends a circular space 3 inches

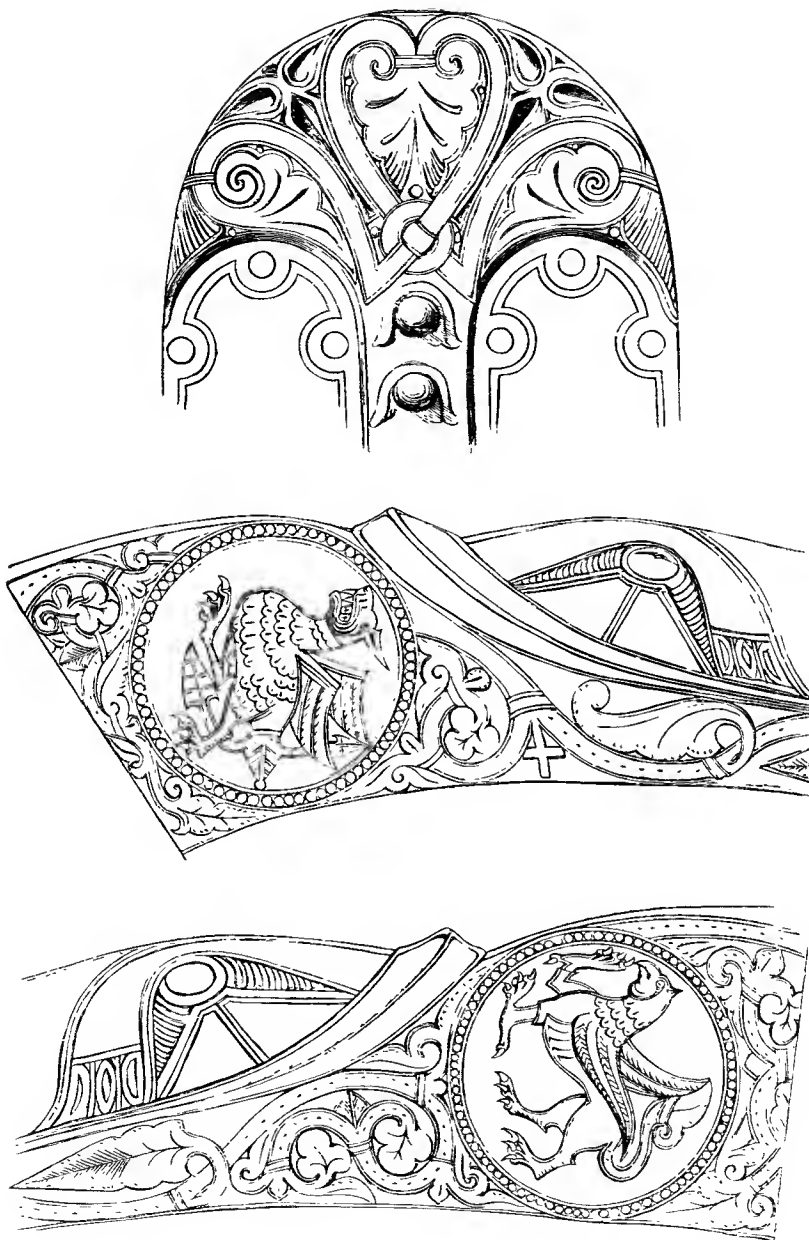


Fig. 3. Ornamentation of the upper part of the box and of the upper and lower ends of the bow of the Dalguisce Harp on the left side.

in diameter surrounded by a pellet border. That on the upper right side is filled with a figure of a lion, unfortunately disfigured by a circular sunk space made subsequently for a setting of some kind. On the lower end the medallion-like space contains a group of animal figures consisting of a horse with its left fore-paw uplifted over a crouching animal with a twisted tail ending in a triangular-shaped leaf, and holding a fish in its mouth by the head. On the lower left side (fig. 3) the medallion-like space contains a griffin with its right fore-paw uplifted, and the upper a nondescript animal with wings and a triple tail ending in triangular leaves. The flat part of the bow between these medallions is ornamented with a running pattern of foliaceous scroll-work, while the inner curve or edge is occupied by a pattern of interlaced linear ornament. On the rounded swell of the front, next to the animals' heads, are two symmetrical patterns of interlaced work of foliaceous scrolls carved in bold relief.

Both these harps were described and figured by Mr John Gunn in his *Historical Inquiry respecting the Performance on the Harp in the Highlands*, published under the patronage of the Highland Society of Scotland in 1807. They have also been recently described and figured with great care and accuracy by Mr R. B. Armstrong, F.S.A. Scot., in a work on *The Irish and Highland Harps*, 1904.

The following books purchased for the Library:—

Thoyt's How to Decipher Old Documents; Laking's Armoury of Windsor Castle; Taylor's Journey to Edenborough in Scotland; Chrystal's Kingdom of Kippen; Joyce's Social History of Ireland; A Royalist Family and Prince Charles Edward, 1689-1789; Fittis's Ecclesiastical Annals of Perth, Renwick's Peebles in Early History; Forrest's History and Antiquities of St Leonard's Hospital, Edinburgh.

There was also exhibited:—

By Mr ALEXANDER GRAY, New Deer, Aberdeenshire.

A Mould of Sandstone, for flat bronze axes and bars, 9 inches by $6\frac{1}{2}$ inches, and $2\frac{3}{4}$ inches in thickness, much weathered on one face,

bearing on the best-preserved face a mould for a flat bronze axe $5\frac{1}{4}$ inches in length by $3\frac{1}{4}$ inches in breadth at the cutting end and $1\frac{1}{2}$ inches at the butt end. The cavity is smoothed, about half an inch in depth in the middle, rising towards either end. On the reverse face are two cavities, both much weathered. One is for a flat bronze axe $3\frac{1}{4}$ inches in length, by about $1\frac{1}{2}$ inches in breadth across the cutting face, and $\frac{1}{4}$ inch at the butt end. The other cavity is for a bar $3\frac{1}{2}$ inches in length by about $\frac{5}{8}$ inch in width. On one of the edges of the mould is a cavity for a chisel-shaped instrument 6 inches in length by $\frac{3}{4}$ inch in width at the broader end, narrowing very gradually to little more than half an inch at the other end. The difference is so slight that it may be merely intended for a mould for a bar or ingot. This mould was found about two years ago in the parish of New Deer, Aberdeenshire, and is now in Mr Gray's collection.

The following Communications were read:—

I.

NOTICE OF ECCLESIASTICAL MUSIC FOUND IN THE
BURGH CHARTER-ROOM OF DUNDEE. By A. H. MILLAR, F.S.A. Scot

On 12th March 1888 I submitted to the Society several sheets of ancient ecclesiastical music which I had found within the covers of a Protocol Book in the Dundee Burgh Charter-Room (see *Proceedings*, vol. x., New Series, p. 164). When engaged making researches for my volume entitled *Roll of Eminent Burghesses of Dundee*, written for the Town Council and published in 1887, I had occasion to examine many of the Protocol Books, dating from about 1480. The pre-Reformation books which have been preserved are more of the nature of first drafts of charters and records of sasines kept by successive Town-Clerks,—Robert Seres, second of the name to hold that office, and Herbert Gledstanes of Arthurshiells, father of Archbishop Gledstanes, and ancestor of the late Right Hon. W. E. Gladstone. It was not until after the appointment of Alexander Wedderburne as Town-Clerk in 1557 that due care was taken to keep the Protocol Books of himself and other notaries-public in proper form. Alexander Wedderburne retained his office till 1582, and was the first of a series of Wedderburnes, Town-Clerks of Dundee until 1744. While the first Alexander Wedderburne was in office, his younger brother, Robert Wedderburne, was a notary-public, and there are in the Dundee Charter-Room six large Protocol Books and twelve small Minute Books written by him, and still in excellent preservation. It was in one of Robert Wedderburne's Protocol Books, dated 1580-85, that the sheets shown to the Society in 1888 were discovered. The sheets of music now to be described were found by me in another of Robert Wedderburne's Protocol Books, dated 1575-76, while I was making researches in the Charter-Room in January 1903. It will now be proved that the sheets formerly described formed part of the same volume of a Roman Missal as that from which the sheets now shown have been taken. As the fragments lately found are more con-

tinuous than those of 1888, it is now possible to give the exact size of the page, to place together five continuous leaves, and to locate the position of the other fragments in the Missal. This makes it necessary to rectify the conjectural dimensions suggested formerly.

When Robert Wedderburne wished to make a new blank Protocol Book, he took a series of sheets, folded in sixes, and stitched them through a strip of vellum. Then he took a large sheet of vellum or of undressed leather to form the outside cover, and pasted the stitched leaves within it. To make "stiffening" for his cover—what would now be made by cardboard—he took a Missal, cut it down to the requisite size, placed the leaves within the outer cover, and pasted a plain sheet of paper over all. He had thus a stiff cover for his Protocol Book. As Protestantism was the settled form of religion in Scotland when Robert Wedderburne flourished, he treated the Roman music-sheets as waste paper, and put them to what he considered a practical use. It is a strange circumstance that the sheets first utilised in this way are in the Protocol Book which he made up in 1575 (now to be described), while those formerly found were applied to a similar purpose five years afterwards. Wedderburne must have kept this old volume beside him for all that time, taking odd sheets as occasion demanded. Another curious fact is that he must have begun to use the sheets in the front of the Missal, for the fragments found in the 1580 volume belong to a later part of the book than those in the 1575 volume. He had thus retained this sacred book of "the auld religioun" as a store of waste paper, to be used for ignoble purposes. This attitude towards Romanism is not strange when it is remembered that Robert Wedderburne was near akin to the authors of the "Gude and Godlie Ballatis" which helped to overthrow the old religion and to obtain for Dundee the name of "the Geneva of Scotland."

Only three fragments could be removed in 1888 from Wedderburne's Protocol Book, as other portions had been firmly pasted to the vellum cover. The later discovery has been more fruitful. I have been able to secure, without tampering in any way with the Protocol Book, no

less than twelve fragments (half-sheets) of the Missal: and as some of the pieces are almost continuous, I have placed $3\frac{1}{2}$ leaves (seven pages) together, and have identified the places of the other fragments in the Missal. The original page has measured $16\frac{1}{2}$ inches by 12 inches, the printed music and words occupying $12\frac{1}{2}$ inches by $9\frac{1}{2}$ inches, with a margin of 1 inch at the top and 3 inches at the bottom of each page. The outer margin measured $1\frac{7}{8}$ inch, and the binding edge, which is partly cut, has been about 1 inch to the fold. The paper is thick cartridge, and there is no water-mark. The music is printed on the four-line staff with square-headed notes, exactly in the form still used in the Roman Church. There are several passages in which the notation differs from that given in modern Missals. The text is in black-letter, with red initials: the staff lines and rubrics are in red, thus involving two printings. The carved wood blocks from which the pages were printed measured $2\frac{3}{8}$ inches, four blocks being used to make a line. One of the notable features in these fragments is the capital letters at the beginning of each section of the service. These must have been printed from separate carved blocks, as they are repeated in different parts of the book. Indeed, repetition of one of these in the sheets formerly discovered and in the present sheets proves that the two sets of fragments belong to the one book. In the twelve fragments now described there are initial blocks, the letters being V, I, E, D, M, and Q. These six blocks are twelve times printed in these fragments by duplication, as follows: V=thrice: D=thrice; E=twice: and M=twice. The letters I and Q only appear once. The design of the letter Q is floral, introducing decorative leaves. All the other letters have grotesque human faces, which do not suggest any special symbolism. The only apparent symbol is the fish, which is used in the letter M, and may be intended to represent the *Iχθys*, the mystic emblem of Christ employed by the early Christians, and frequently found in the catacombs at Rome. There seems to have been no distinct rule for the insertion of these blocks at certain parts of the Service. The Tractus, Communio, Offertory, and other portions are introduced by enlarged initial letters

printed in red; but the decorated initials are used without special reference to the context. It is reasonable to suppose that the printer had a limited number of pictorial initials, and utilised these wherever the words of the Service enabled him to do so. And here it may be noticed that the frequent introduction of red letters and music-lines, and black letters, on the same page, thus implying the passing of every sheet twice through the press, shows the patience and care with which printing was practised in the infancy of the art.

After careful examination, with very little to guide one in the search, I was able to place seven out of the twelve fragments in consecutive order, thus making $3\frac{1}{2}$ complete leaves, or $6\frac{1}{2}$ pages. One of the difficulties which hindered identification of the fragments was this. Robert Wedderburne found that if he merely cut through a leaf of the Missal the two portions would be too large for his Protocol Book. He therefore trimmed off parts of the top margins, and cut away about 2 inches in the centre of each page to bring the sheet to the required size. This removed, generally, two lines of the music-staff and part of the words from the centre of each page: but in spite of these difficulties the exact sequence of these seven fragments has been discovered, and they have been put together to make complete pages, minus the missing central parts. It is worthy of note that in the twelve fragments there are only two "sig." marks. These are "d.ijj" and "g.iiij." Unfortunately these marks are so placed that they afford no clue to the size of the printed sheet. As there are three consecutive leaves following the "d.ijj" mark, without any other mark, it seems probable that the printed sheet consisted of four leaves, making eight pages.

In transcribing the text as shown in the various fragments, I have given first the pieces which are unquestionably consecutive, forming $3\frac{1}{2}$ pages. The other fragments I have indicated to show their position in the Missal. There are one or two peculiarities in the text which help to fix the date as towards the close of the fifteenth century. For instance, the phrase "voluntatem domini" was changed in 1616 to "voluptatem domini," as now used. The first page is titled "Feria

Contra prima in xl.

am cognouit nomen meum. **V.** Quocabit
me et ego exaudiam eum cum ipso
sum in tribulatione. **V.** Rapiam e
um et glorificabo eum longitu
dine dierum adimplebo eum et ostendu

bu lem in me di o umbre mortis non ti
mebo mala quonia tu mecum es
domine. **V.** Ir ga tu
a et bacu lusu us i pla me
consola ta sunt, **Offr.** O Refusus meos

Fig. 1. Reduced Facsimile of two portions of a page of the Missal.

Sexta et Sabbato,' and begins with the concluding portion of the service for "Feria quinta post Cineres." The transcription is given line for line:—

First page.

☩ FERIA SEXTA ET SABBATO.

[A] nimis meam Deus meus in te confido non erubescam neq3. irideant me inimici mei etenim universi qui te expectant non confundentur. COIO. Acceptabis sacrificium iusticie obla

[Two lines of music and words missing here]

mentis dominus factus est adiutor meus. PS. Exaltabo te domine qm suscepisti me : nec dele-tasti inimicos meos super me. Gloria. Eaonae. Rx. Unam dñj.

Second page.

☩ FERIA VI ET SABBATO.

petij a domino hanc requiam ut inhabitem in domo domini. V. Ut videam voluntatem domini et protegam a templo sancto eius]

[Two lines of music and words missing here. TRACTUS.
in centre of line]

ut sciam testimonia tua. CŌ. Servite domino in timore et exultate et cum timore apprehendite disciplinā ne pereatis de via iusta.

DOMI-
NICA PRI-
MA in XL.

Third page.

☩ DOMINICA PRIMA IN XL.

am cognovit nomen meum. V. Invocabit me et ego exaudiam eum cum ipso sum in tribulatione. V. Eripiam meum et glorificabo eum longitudo dierum adimplebo eum et osten[dam]

[Two lines of music and words missing here]

OFFER. Scapulis suis obumbrabat tibi dominus et sub pennis eius sperabis scuto circumdabit te veritas eius. COIO. Scapulis su-

Fourth page.

● FERIA SECUNDA

is obrumbabit tibi et sub pennis eius spera-
bis scuto circumdabit te veritas eius. FERIA.
Sicut oculi seniorum in manibus. SECUNDA.
dominō enim suorum ita oculi nostri ad
dominum deum nostrum donec misereatur nostri

[Two lines of music and words missing here]

[No]bis. PS. Ad te levavi oculos meos; qui habitas in
celos. GLORIA. EUOUE. Rx. Protector noster
aspice deus et respa-

Fifth page.

● FERIA SECUNDA.

ce super servos tuos. V. Domine
dens virtutum exau-
di preces seniorum tuorum
TRACTUS. Domine non secundum. OFFR. Levabo ocu-
los meos et considerabo mirabilia tua

[Two lines of music and words missing here]

as da michi intellectum ut di-
scam mandata tua. CŌ. Doce me-
a ad dominum clamavi et exaudivit me de

Sixth page.

● FERIA TERTIA.

monte sancto suo non timebo milia popu-
li circumdantis me. ● FERIA TERTIA.

Domine refugium factus es nobis a genera-
tione et progente a seculo et in seculum tu
es. PS. Priusquam montes fierent aut formaretur
terra et orbis. GLORIA. EUOUE. Rx. Diriga-
tur oratio mea sicut incensum in conspe-
ctu tuo domine. V. Eleva-
tio manuum mearum sa-

Seventh page. [Top margin and line of music-staff missing here]

crificium vespertinum. OFFR.
In te speravi domine dixi tu es de-
us meus in manibus meis tempora mea. CŌ.
Cum invocarem te exaudisti me dens iusticia
mee in tribulatione dilatasti me misereere

[The remainder of this page is missing. It must have had the first part
of *Feria Quarta* in XL., as the other side of the leaf runs thus -]

Eighth page.

Libera nos deus israel ex omnibus angustiis
nostris. PS. Ad te domine levavi animam meam, deus
meus in te confido non erubescam. GLORIA. EUOUE. RV.
Tribulationes cordis mei dilatate
sunt de necessitatib. meis eripe me de[m]ine]
[The remainder of this page is missing.]

These seven half-page fragments are the only pieces out of the twelve
that follow consecutively. From the context I have located the
different positions of the other five fragments. These are as follows —

Eighth fragment. (Obverse. End of *Feria Secunda post Dom. III. in XL.*
and beginning of *Feria Tertia.*)

tionem quia dominus ipse est deus. CŌ. ---
Ab occultis meis munda me domine et ab ali- FERIA
enis parce servo tuo. TERTIA
Exaudi deus orationem meam et ne despe-
xeris deprecationem meam intende in me et exau-

(Reverse. Part of *Feria Tertia post Dom. III. in XL.*

[No]bis et libera nos propter no-
men tuum. V. Deus a nobis
nostris audivimus patres nostri
annuntiaverunt nobis opus q̄d operatus es
in diebus eorum in diebus anti-

[As this fragment has been taken out of the centre of a page,
the upper and lower parts are missing.]

Ninth fragment. (Obverse. End of *Feria Sexta post Dom. III. in XL.*
and beginning of *Sabbato.*)

et orationis mee rex meus et deus me-
us quoniam ad te orabo do-
mine. CŌTŌ. Qui biberit aquam quā ego SABBATŌ.
dabo ei dicit dominus fiet in eo fons
aque salientis in vitam eternam.

(Reverse. Part of *Sabbato.*)

[Am]bulam in medio umbrę mortis non ti-
mebo mala quoniam tu mecum es
domine V. Vnga tu-
a et baculus tuus ipsa me
consolata sunt. OFFR. Gressus meos

[As this fragment has been taken out of the centre of a page,
the upper and lower parts are missing.]

Fourth fragment. (Obverse. Part of *Dom. IV. in XL.*)

et satiemini ab ulceribus consolationis
vestre. PS. Letatus sum in his que dicta sūt michi
in domū domini ibimus. GLORIA. EUOUE. R. x.
Letatus sum in his que dicta sūt michi
in domū domini ibimus. V.

g mj.

(Reverse. Continuation of *Dom. IV. in XL.*)

[con]v[er]sit in eternum qui habitat in iheru-
salem V. Montes
in circuitu eius et dominus in
circuitu populi sui ex hoc nunc et
usq. in seculum. OFFR. Lau[date]

[This fragment forms the lower half of a page. The "sig. already mentioned, "g mj," is on this page.]

Fifth fragment. (Obverse. Part of *Firma Quarta post Dom. IV. in XL.*)

Domine non secundum peccata
nostra facias nobis neq. secundum iniquitates
nostras retribuas nobis. V. Domine
ne memineris iniquitatū nostrarum
antiquarum cito adiuvent nos misericordiæ

(Reverse. Continuation of above.)

tu es dominus deus noster. PS. Mi-
serere mei deus miserere mei : quoniam in te confidit anima
mea. GLORIA. EUOUE. R. x. Miserere mei deus
miserere mei
quoniam in te confidit anima.

[This fragment has been taken from centre of a page :
upper and lower portions missing.]

Sixth fragment. (Obverse. End of *Firma Sexta post Dom. Passiones.*)

[tra]h[er]is calūniatib[us] me superbis et respondebo exprobra-
tilis michi verbum. CITO.
Ne tradideris me domine in manus persecutorum
ne quā inuenerint in me testes iniqui et
mentata est iniquitas sila.

*Dom. in
Palmis.*

* *qua* found as in more modern Missals.

(Reverse Portion of *Dominica in Palmis*)

Rx. Tenisti manum dexteram
meam in voluntate tua dedisti
mi me et cum gloria assum-
psisti me. V. Quam bonus israel
deus rectis

[As this fragment has been taken out of the centre of the page,
the upper and lower parts are missing.]

Having thus described these interesting fragments, a word may be said about Robert Wedderburne, the notary, by whom this fine missal was mutilated nearly 330 years ago. In my notice of the former ecclesiastical music (12th March 1888) he was wrongly described as "a younger son of the first Alexander Wedderburne, Town-Clerk of Dundee." He was a younger brother of the Town-Clerk. In 1896 I began the transcribing and editing of "The Compt-Buik of David Wedderburne, of Dundee, 1587-1630," which was published in 1898 by the Scottish History Society: and the extended research which I had to make into the family history of the Wedderburnes disclosed this error. Then Mr Alexander Wedderburn, K.C., published in 1898 his exhaustive work about the family, entitled "The Wedderburn Book," and he threw much light upon the intricacies of the genealogy. The true account of Robert Wedderburne, founded upon documentary evidence, is as follows:—

He was the third and youngest son of Robert Wedderburne, and was born in 1546. His eldest brother, Alexander, the Town-Clerk, was his senior by about sixteen years, and Robert's name first appears in 1561 as servitor to his brother. He was admitted a notary at Edinburgh on 3rd March 1574-75, having served three years under Alexander Guthrie, Town-Clerk of Edinburgh, and seven years under his brother, Alexander Wedderburne. He returned to Dundee and began practice as a notary-public, his first protocol-book being the one dated 1575-76, from which these twelve fragments of music have at length been rescued. In September 1583 he was married to Margaret, daughter of Robert Myln, of Dundee, by whom he had four sons and two daughters, all of

whom predeceased him. On 15th March 1588 he was admitted burgess of Dundee, and was chosen Procurator-Fiscal in the following year. He died in October 1611, as is shown by his will, proved at Brechin on 7th June 1612. As he was then a childless widower, he made his nephew Peter (son of his elder brother Peter) his heir. It is a striking fact that though Robert Wedderburne was born several years before the Scottish Reformation was accomplished, ere he attained the age of thirty he could treat this consecrated missal as a collection of waste paper, unworthy of respect or preservation. I have to acknowledge valuable assistance rendered to me by the Very Rev. Canon Phelan, Dundee, by the use of various missals; and by Mr F. C. Leles, Stonehaven, the well-known liturgist. Thanks are also due to Mr Charles Burne, Lord Provost of Dundee, who (with the consent of the late Sir Thomas Thornton, Town-Clerk) permitted me to remove the sheets for identification. These fragments are mounted between glasses for preservation, and placed in the Dundee Public Museum, beside the portions formerly discovered.

II.

NOTICE OF A STONE MOULD FOR CASTING FLAT BRONZE AXES AND
BARS FOUND IN THE PARISH OF INSCH, ABERDEENSHIRE; WITH
NOTES ON THE OCCURRENCE OF FLAT AXE MOULDS IN EUROPE.
By J. GRAHAM CALLANDER F.S.A. Scot.

SUMMARY.

Description of the Fouldland mould. Remains of a black coating in the matrices. Shape of the casts as they came from the mould. All recorded flat axe moulds are of stone, none of clay. Table of flat axe moulds found in Europe. Slabs bearing axe-like hollows found associated with internments.

The Kilmarin slab—The Shapwick slab. Objects found associated with flat axe moulds. All the British flat axe moulds apparently open moulds, but some Spanish and French examples used with covers. Sandstone the favourite material for these moulds. The number of moulds from Scotland and Ireland compared with the number of flat axes from these countries. Statistics of finds contradictory. All the recorded Scottish flat axe moulds have been found in the north-east part of the country. Suggestions regarding the smaller matrices on the Fouldland mould—Probably for the smaller sizes of flat axes—Examples of this shape and size in *compar* common in Ireland—Also found in Swiss lake-dwellings. The matrices on the Fouldland mould compared with the “Maidens’ head” of flat axes. Moulds for bars found in Scotland. The Mannoeh mould now in Banff Museum. Probable purposes of the bars—Ingots, chisels, rings, or amulets—Most probably for amulets—Similar moulds from Spain and France supposed to have been for amulets. Chronology.

The stone mould for casting flat bronze axes and bar-like objects which is the subject of this paper, was found two years ago on a small farm on the south face of the Hill of Fouldland, in the parish of Inch, Aberdeenshire. It had been turned up by the plough, and no other objects were observed associated with it. It is here shown (figs. 1, 2) to a scale of $\frac{1}{4}$, and for comparison a similar mould from Culbin Sands is shown along with it (figs. 3, 4) to a scale of $\frac{1}{3}$.

The stone is a rather thin, flat block of reddish brown quartzose sandstone. It somewhat resembles a voussoir, or a keystone of an arch, being slightly broader at one end than at the other. It measures 8 $\frac{1}{2}$ inches at its greatest length, 7 inches at its greatest breadth, 6 inches at its narrowest breadth, and 2 to 2 $\frac{1}{2}$ inches in thickness. The mould

is in a wonderfully good state of preservation, and the matrices show the precise shape and size of the objects which could have been cast in all of them except one, which is so much damaged as not to admit of the exact measurements being determined. Other two of the matrices are slightly broken at one side, but they are sufficiently preserved to exhibit their perfect shapes and sizes. The stone has incised upon its matrices for no fewer than nine different objects: four are for flat bronze axes, three are for flat axe-like tools of a smaller size, and two are for bars or ingots. The obverse of the stone bears three matrices, the reverse four, and on each of two sides there is one matrix, each of the four faces being thus fully utilised. Two of the matrices on the obverse (fig. 1), for flat bronze axes, are placed alongside each other, but reversed, the butt of the one being in juxtaposition to the face of the other. The third matrix on this side is for one of the flat axe-like implements, and it is placed across the narrow end of the stone, at right angles to the two axes. It is so much damaged that the only dimension obtainable is its greatest breadth. The matrices on the reverse (fig. 2) are for the smallest of the axes, the smallest of the axe-like tools, and for two bars or ingots, all of which are placed alongside each other on the stone. The axe and the axe-like object are laid down reversed, like the two axes on the obverse. The axes are of the ordinary flat bronze type, with the top and bottom edges expanding trumpet-like towards the cutting face: the axe-like objects have the top and bottom edges straight from the butt to the cutting face: and the bars are straight and of quadrilateral section the top being rather broader than the bottom.

The sides and bottoms of all the matrices on the obverse and the reverse have been covered with a coating of a black substance which reflects light at certain angles. This coating is specially noticeable in the matrices for the two largest axes, and traces of it are quite distinct in the four matrices on the reverse. It has not been detected on the two matrices on the sides of the stone, or on any part of the surface of the stone outside the matrices. Sir John Evans, in referring to

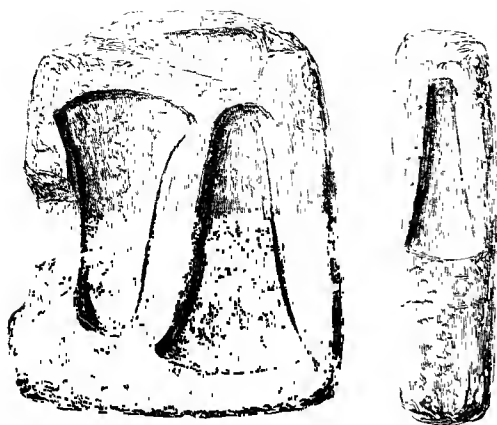


FIG. 1. Obverse and right side of Stone Mould found at Hill of Foudland, Inch, Aberdeenshire. (1.)

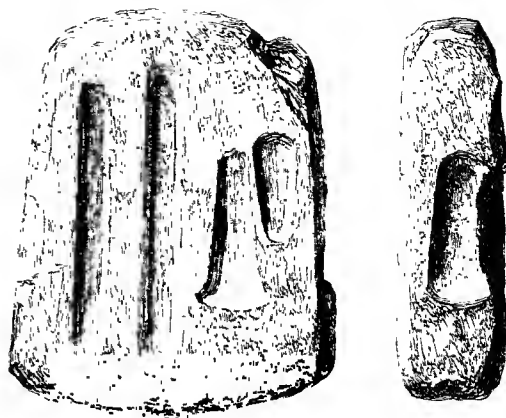


FIG. 2. Reverse and left side of Stone Mould found at Hill of Foudland, Inch, Aberdeenshire. (1.)



FIG. 3. Obverse of Stone Mould found on Culbin Sands. (1.)



FIG. 4. Reverse of Stone Mould found on Culbin Sands. (1.)

moulds made of bronze, mentions that "in order to prevent the molten bronze from adhering to the bronze mould, the latter must have been smeared with something by way of protection, so as to form a thin film between the metal of the mould and that of the castings."¹ In the case of a stone mould there would be no danger of the metal adhering to the stone, and so making it difficult to extract the cast. The contraction of the metal as it cooled would counteract this. At the present day iron-moulders paint the insides of their moulds with charcoal or plumbago blacking, so that the casts may have a finer skin or surface. The ancient bronze-founder may have discovered that by giving his mould a coating of some substance, as his modern successor does, he was able to produce a finer casting, and it may be that this black substance is still the remains of it. Some moulds found at El Argu, Spain, including the two for flat axes referred to later, show that the sandstone of which they are made has been reddened by the action of the molten metal (*là où le métal a coulé, ils sont colorés en rouge*).²

The matrices for six of the cutting tools are cut almost perpendicularly into the stone at the cutting faces, and so would produce an object which would require to be hammered out, or ground, to give it a sharp edge. The seventh matrix, No. 4 in the photograph (fig. 5), for the smallest of the four axes, is cut slantingly into the stone at the cutting face, and would produce a cast with a fairly sharp edge, requiring little hammering or grinding beyond what was necessary to bring the cutting edge to the centre of the face of the tool. As the casts left the mould they were flat on the top and curved on the under side, so a certain amount of working was necessary to make the sides symmetrical and balanced. This point is referred to by Sir Arthun Mitchell in describing the Strathconan mould. He also states that no genuine ancient bronze implements show signs of having been ground or rubbed down after they had left the mould; that all subsequent fashioning had been

¹ *Ancient Bronze Implements*, p. 444.

² H. and L. Siret, *Les premiers Ages du Métal dans le Sud-Est de l'Espagne*, texte, p. 127.

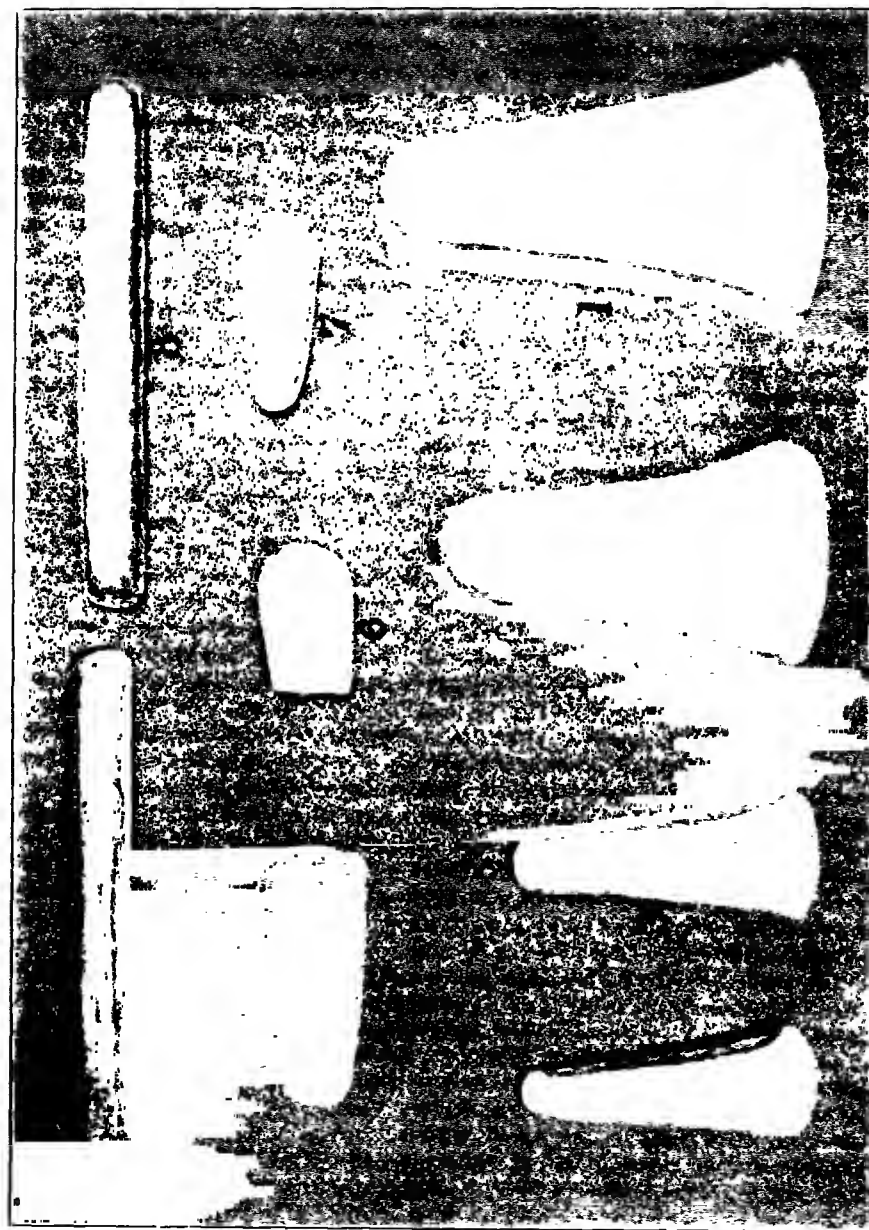


Fig. 5. Photograph of Plaster Casts taken from each of the Matrices of the Pondland Mould.

STONE MOULDS BEARING MATRICES FOR CASTING FLAT AXES OF BRONZE OR OF COPPER.

Where Found	Description and Number of Matrices.	Where now Located.	Source of Information.
SCOTLAND.			
I. Strathcroman, Ross-shire	One flat axe 1	In the possession of the Right Hon. A. J. Balfour of Whittinghame	<i>Proc. Soc. Ant. Scot.</i> , vol. XXIII, p. 59.
II. Culham Sands, Moray-shire	Two flat axes and small groove on obverse, one flat axe on reverse, and one small flat axe-like object on one side 5	Nat. Mus. of Antiq. of Scotland	<i>Proc. Soc. Ant. Scot.</i> , vol. XXV, p. 195.
III. " " "	A fragment. One flat axe on each face 2	" " "	" " "
IV. Kintore, Aberdeenshire	Two flat axes on obverse 2	" " "	" " "
V. Fouldland, Inverclyde-shire	Seven flat axes and two bars 9	" " "	<i>Proc. S. A. S.</i> , vol. II, p. 31; vol. VI, p. 209; Evans, <i>Anc. Bronze Imp.</i> , p. 130.
VI. New Deer, Aberdeenshire	One flat axe on obverse, one flat axe and one bar on reverse, and one bar on the side 1	In the Collection of Mr. Alex. Gray, New Deer	Described in Notice.
VII. Marnoch, Banff-shire	One flat axe on obverse, one ring and one bar on reverse 3	Banff Museum	<i>Proc. Soc. Ant. Scot.</i> , vol. XXII, p. 369.
ENGLAND.			
I. Wallington, Northumberland	Two flat axes on obverse, one flat axe and one flat ring on reverse 1	British Museum	Evans <i>Anc. Bronze Imp.</i> , p. 130; <i>Arch.Æliana</i> , vol. IV, p. 107.
II. Harbuck, near Lancaster, Durham	One flat axe on obverse, two flat axes on reverse 3	Canon Greenwell's Collection	Canon Greenwell and Mr. E. W. F. Balfour.
III. Same district as No. II.	One flat axe on obverse, two flat axes on reverse 3	In the possession of Mr. E. W. F. Balfour, Gossett	" " "
IRELAND.			
I. Ireland	Two flat axes on obverse, one flat axe and one knife on reverse 4	Nat. Mus. of Antiq. of Scotland	<i>Museum Gallopinæ</i> , p. 121; <i>Proc. Soc. Ant. Scot.</i> , vol. II, p. 31.
II. Lough Sen Can bog, Leitrim	One flat axe and one looped palstave on obverse, one flat axe on reverse 3	Royal Irish Academy's Collection	White, <i>Catal. of Round Irish Food Coll.</i> , p. 91, fig. 72; <i>Evans</i> , p. 130.
III. Carrackbeggs, Antrim	Three flat axes 3	Bateuan Collection	Evans, <i>Anc. Bronze Imp.</i> , p. 130; <i>Antiquar. Coll. Catal.</i> , p. 78.
IV. Ireland	Four flat axes 4	Belfast Museum	Evans, <i>Anc. Bronze Imp.</i> , p. 130.
V. Ballymena	One flat axe 1	St. John Evans' Coll.	<i>Arch. Journal</i> , vol. IV, p. 335; Evans, <i>Anc. Bronze Imp.</i> , p. 128.

BERGIC M. I. Filée, Province de Namur	Flat axe mould	Museum at Namur	M. George Macout, Brussels, and <i>Annales de la Soc. Arch. de Namur</i> , T. VII, p. 451.
FRANCE. I. Plouharnel, canton de Quiberon, arrondissement de Lorient (Morbihan)	Flat axe (<i>hache plate</i>) mould of red granite	Lecland Collection at Plouharnel	Chantre, <i>Ann. du Breizh</i> , 1re série, p. 53, No. 62 in table; quotes M. Parvicaud, <i>Étude de la Soc. Arch. de Nantes</i> , 1868, T. VII, pl. 1, fig. 1.
II. Molières-Bains, Pyrénées- Orientales	One face has a matrix for a flat axe, <i>hache plate à l'ours</i> <i>druides</i> , the other face has a matrix for a similar axe and a long and deep cavity taper- ing towards the ends	In the possession of M. de Massia, Molières-Bains	M. Salomon Reinach and <i>Matières pour l'Histoire primitive et naturelle de l'Homme</i> , 1888, vol. XXII, p. 158.
SPAIN. I. El Aguila, Almería	Flat axe mould of micaceous sandstone with one matrix	British Museum	Siret, <i>Les Premiers âges du Métal dans le Sud-Est de l'Espagne</i> , Texte, p. 127, Album, pl. XXVII.
II. and III. — IV. and V. Cerro de los Santos, Montealegre, Toledo, Murcia	Two flat axe moulds of micaceous sandstone with one matrix Two flat axe moulds	Royal Museum at Brussels National Archaeo- logical Museum at Madrid	Don Francisco Alvarez Ossorio, Madrid.
SWITZERLAND. I. Grenchen-Juch, Lake of Mont II. Föllingensee, Lake of Con- stance	Mould for flat axe, with the casting still in its case. Resembls preceding example	Museum at Lucerne Museum at Stuttgart	Munro, <i>Lake Dwellings of Europe</i> , p. 70. <i>Ibid.</i> , p. 70.
ITALY. I. and II. Bodio in the Lago di Varese	Two moulds, apparently for flat or slightly flanged axes		Evans, <i>Ann. Assoc. Imp.</i> , p. 150 quotes Vegazzini, <i>L'anno 1878</i> , <i>notiziario</i> , de Varese, 1878, p. VI, 18-20.
BAVARIA. I. Rosenbusch, Starnbergersee (Wurtemberg), near Munich.	Broken flat axe mould	Ethnographische Museum at Munich	Professor D. A. Ranke, Munich.

done with the hammer.¹ Mr George Coffey, however, says that some Irish *copper* axes have been ground.²

Stone moulds for flat bronze axes are by no means common in the British Isles, and are less so on the Continent. I have been able to tabulate 28 European examples:—7 from Scotland, 3 from England, 5 from Ireland, 1 from Belgium, 2 from France, 5 from Spain, 2 from Switzerland, 2 from Italy, and 1 from Bavaria. They are, indeed, less numerous than might have been expected from the large number of flat bronze axes that have been found. That clay moulds were more often used might be suggested as a possible reason for this, but no clay moulds for flat bronze axes have been recorded; besides, it is not to be expected that an itinerant bronze-founder, as probably was the proprietor of this mould, would carry about a heavy stone mould if he could secure the less heavy one of clay.

One of the end slabs of a cist found at Kilmartin, Argyllshire, bears a series of flat axe-shaped depressions, which seem too shallow to have been used as matrices for casting flat bronze axes. The number of depressions is variously given as seven,³ eight,⁴ and nine,⁵ but the cast of the slab in the National Museum seems to have eight depressions on it. Another slab from the opposite end of the cist "is marked with a long groove picked out with a sharp-pointed instrument, and having ten shorter grooves at right angles to it."⁶ One of the side slabs adjoining the stone with the axe-like markings has "9 or 10, or 11 small 'pits' or hollows, as large as a fourpenny piece, most clearly artificial."⁷ In the British Museum there is a fragment of a slab about 20 inches long and about 17 inches broad, from the Durden Collection at Blandford, which was found in the centre of a barrow at Shapwick, Dorsetshire.⁸

¹ *Proc. Soc. Antiq. Scot.*, vol. xxxii p. 39.

² *Journal of the Anthropological Institute*, vol. xxxi. p. 274.

³ Evans, *Ancient Bronze Implements*; see note to one of the references, p. 430.

⁴ *Proc. Soc. Antiq. Scot.*, vol. viii. p. 379, fig. 3.

⁵ Evans, *Ancient Bronze Implements*, p. 430.

⁶ Dr Joseph Anderson, *Scotland in Pagan Times,—Bronze and Stone Ages*, p. 88.

⁷ *Proc. Soc. Antiq. Scot.*, vol. viii. p. 380.

⁸ *Catalogue of the Durden Collection*, No. 41, p. 19.

Several urns were found in the barrow, but unfortunately they were destroyed. The slab originally measured $6\frac{1}{2}$ feet by 4 feet by 15 inches, but all that is now preserved is a part bearing incised figures. The objects incised upon it are all on one side of the stone, and comprise three, or perhaps four, axe-shaped hollows, and six small cup-like markings, two of which appear to be joined by a duct. The two largest axe-shaped depressions, which measure 12 inches and $8\frac{1}{2}$ inches in length, and $5\frac{1}{2}$ inches and $3\frac{1}{2}$ inches at their greatest breadth, have each a protuberance springing from the top and bottom edges just behind the cutting face. The third axe-like hollow is about $3\frac{1}{2}$ inches in length, and is of the shape of the ordinary flat axe. As for the fourth axe-like incision, it is doubtful if it were meant to represent a flat axe. It is triangular in plan, with an acute angle at the apex, and has straight sides. The cups vary in size from $1\frac{1}{4}$ inches to $1\frac{3}{4}$ inches in diameter, and some of them are $\frac{3}{8}$ of an inch deep. The axe-shaped hollows vary from $\frac{1}{4}$ to $\frac{1}{2}$ an inch in depth: on the Kilmartin slab the hollows are much shallower.

None of the flat axe moulds from the British Isles appears to have been found associated with any other remains. No objects seem to have been recorded as found directly associated with the mould from the Lough Scuir Crannog,¹ or the example from Kintore, which is said to have been found in a cairn. As for Continental examples, the mould from Plouharnel, Brittany, is recorded as an isolated find:² the other French example, from Molitg, Pyrénées-Orientales, is stated to have been found at the foot of a large block of granite in a field along with some fragments of pottery scattered in earth mixed with bits of charcoal (*une terre charbonneuse*):³ and the two moulds from El Argar were found with crucibles and other moulds, including one with three matrices for bars, in a small round space, roughly vaulted by means of stone and earth.⁴

All but one of the British and some of the Continental flat axe moulds

¹ Munro, *Lake Dorellans of Europe*, p. 370.

² E. Chantre, *Age du Bronze*, 1^{re} ptie., p. 33.

³ *Matériaux pour l'Histoire primitive et naturelle de l'Homme*, 1888, vol. xxi, p. 158.

⁴ Siret, *Les premiers Ages du Métal*, texte, p. 127.

seem to have been used as open moulds without a cover: at least, it has not been recorded that cover-stones have been found with them, or that they showed any signs of having been so used. No. II. of the Irish examples probably had been furnished with a cover for the face bearing the matrix for the looped palstave, though such an arrangement was not found with it. The French specimen found near the Spanish border had apparently been used with a cover,¹ and one of the axe moulds and the mould with the three bar matrices from El Argar were found with their cover-stones complete, while there were also fragments of what had been the cover-stone of the other axe mould.²

Sandstone seems to have been the favourite material for making these flat axe moulds. All except No. I. from Scotland, the three examples from England, several of the Irish specimens, No. II. from France, and Nos. I., II. and III. from Spain, are of this material. No. I. from France is of red granite.

It is seen that 7 moulds for flat axes have been found in Scotland, 3 in England, and 5 in Ireland. Judging from the number of flat bronze axes in the National Scottish and Irish Collections, this is not what might have been expected. The Irish National Collection contains 85 copper and nearly 200 bronze flat axes, all found in Ireland, and our own National Museum contains 74 Scottish flat bronze axes.³ In view of there being only 74 Scottish against nearly 300 Irish flat axes in the respective National Collections, it is surprising to find that more flat axe moulds have been found in Scotland than in Ireland. From the number of flat axes found, Ireland should have furnished several times the number of moulds found in Scotland. It will also be noticed, that, with the exception of the cist slab from Kilmartin, which probably was not a mould, all the Scottish specimens come from the north-east part of the country. Four of them have

¹ *Matériau pour l'Histoire primitive et naturelle de l'Homme*, 1888, vol. xxii, p. 158.

² Siret, *Les premiers Âges du Métal*, t. xte p. 127, album pl. 27.

³ Four of these are said to be of copper. *Journal Anthropological Institute*, vol. xxi, p. 278.

been found within a radius of fifteen miles in the counties of Aberdeen and Banff. Considering that so large a proportion of flat axe moulds has been found in that portion of Scotland, it is a striking fact that of the 74 Scottish examples of flat axes in the National Collection, only 5 come from Aberdeenshire and 9 from Banffshire, which includes the hoard of 7 axes from Colleenard, in all only 14 specimens from the two counties, a very small proportion considering also the wealth of prehistoric remains in this part of the country. These apparent contradictions, applying not only to the two different countries but to different parts of Scotland, show how untrustworthy are mere statistics of finds in the formulating of theories.

The mould under consideration shows that no two of the implements cast from it were of the same dimensions. The four axes are finely graded in size, and the smallest of them is slightly larger than the largest of the axe-like objects, which again are each of a different size. None of the 74 Scottish flat axes in our Museum is so small as the smallest of these tools, and none of them is shaped like any of the three axe-like objects. The top and bottom edges of the whole 74 curve out trumpet-like as they approach the cutting face: not a single one has its edges running in straight lines from the butt to the face. It is rather unlikely that the cutting faces of the tools from this mould were lengthened to any appreciable extent by hammering after they were cast, because it is seen from the mould that the founder was careful to have the matrices cut very accurately to correspond to the shape of the finished article. This is specially noticeable in the case of No. 4, which so attenuates as it approaches the cutting face that it is evident that the ultimate shape of the tool differed very little from its shape when it left the matrix. This, I think, is borne out also by the Wallingford mould, on which the smallest of the three axe matrices is of this straight-edged type. This matrix is $3\frac{2}{16}$ inches long. The probabilities are that these three matrices on the Fouldland mould and the one on the Wallingford example show the form of the smaller sizes of the flat bronze axe, and that in the first-mentioned mould

there is exhibited a fairly complete set of the various sizes of flat bronze axes in use in the Scottish area at some stage of the Early Bronze Period. The peculiar contour of the smaller type of axes may be accounted for by the fact, that if their edges had curved in from the cutting face to the butt, they would have been too light for use as axes, but by having the edges straight they absorbed a greater quantity of metal, which gave them a little more necessary weight. When the axe was made larger it was seen that the cutting face could be lengthened, or, to put it another way, that a certain amount of metal could be taken away from the edges of the tool without affecting its efficiency. The smallest specimen looks rather small and light to have made an effective axe, and it may have been used as a chisel, but, so far as I am aware, chisels of this shape have not been recorded. Mr W. J. Knowles, of Ballymena, has a stone mould with matrices for a socketed and looped spear-head and for what he considers a small chisel. However, the latter matrix differs from the small matrices on the Fouldland mould by being straighter at the cutting face, and by tapering more towards the other end. Some Spanish chisels of copper which have been figured are shorter and more rectangular in shape.¹

This type of small straight-edged axe seems to be very rare in bronze, although it is found to be not uncommon in copper. Specimens have been found in Ireland and in the Swiss lake-dwellings.² So much do some of them resemble the shapes and sizes of the smaller matrices on this mould that they might have been cast in them. Straight-edged flat axes of copper of larger sizes, simulating thin stone axes, have been found from the Levant to the Atlantic. They have been found in Cyprus, Italy, Switzerland, Spain, and Ireland. MM. Henri and Louis Siret have figured a series of Spanish flat axes of copper, showing a complete record of the various developments from the straight-edged imitation in copper of the stone axe to the perfected flat axe of bronze, with its elongated cutting face and curved sides. Mr George Coffey

¹ Siret, *Les premiers Ages du Metal*, album pl. 10, figs. 6-9.

² Munro, *Lake Dwellings of Europe*, p. 140.

has illustrated this most elaborately in a series of flat axes of copper found in Ireland.¹ Although several parts of the Continent and Ireland have furnished many flat copper axes of the shape of a thin stone axe, none appear to have been found in Scotland. All the recorded specimens seem to be of the fully-developed bronze flat axe type, with its diverging trumpet-like sides. However, the employment in Scotland of a small axe-like tool with straight edges is demonstrated by this mould. The discovery of any actual specimen has not yet been recorded, but it may now be inferred that not only did such a type exist, but that it was contemporary with the larger flat axe, with its curved edges.

From the list of flat axe moulds which I have been able to compile, it will be noticed that all have been found in the south and west of Europe. I have been informed by Dr Oscar Montelius and Dr Sophus Müller that no flat axe moulds have been found in Scandinavia or Denmark, and by Dr Gotze, Berlin, that there are none from Germany in the King's Museum, Berlin.

Attention has been directed to the striking gradation in the sizes of the five flat bronze axes found at the "Maidens," Ayrshire;² but that fine hoard is even surpassed by the set of axes that could have been cast in the Foudland mould, both as regards regularity of gradation and the completeness of the set of tools. Though some of the axes from the "Maidens" are much worn, and though the finished tools from the Foudland mould might differ a little in size from the matrices, it may be of interest to compare the dimensions of them. The following tables give the respective measurements of the axe matrices on the mould and of the axes of the hoard.

It will be noticed that the smallest of the axes in the "Maidens" hoard is $3\frac{3}{4}$ inches in length and $1\frac{1}{2}$ inches in breadth, and that the smallest of the four typical flat axe matrices on the Foudland mould is about $3\frac{7}{16}$ inches in length and about $1\frac{5}{16}$ inches in breadth. The

¹ *Journal Anthropological Institute*, vol. xxxi., pls. xxi.-xxxiv.

² *Proc. Soc. Antiq. Scot.*, vol. xvii. p. 433. *Arch. and Hist. Collection of Ayr and Weyton*, vol. iv. p. 1.

The Foudland Mould.				The "Maidens" Hoard.			
No.	Length.	Greatest Breadth.	Thickness.	No.	Length.	Greatest Breadth.	Thickness.
	Inches.	Inches.	Inch.		Inches.	Inches.	Inch.
1	$5\frac{1}{2}$	$3\frac{5}{8}$	$\frac{1}{2}$	1	$5\frac{1}{2}$	$4\frac{1}{8}$	$\frac{2}{3}$
2	$4\frac{3}{4}$	$2\frac{5}{8}$	$\frac{1}{5}$	2	$4\frac{3}{4}$	$2\frac{5}{8}$	$\frac{2}{3}$
3	$3\frac{3}{4}$	1 $\frac{1}{2}$	$\frac{1}{5}$	3	$4\frac{3}{4}$	$2\frac{3}{4}$	$\frac{3}{16}$
4	$3\frac{7}{8}$	$1\frac{3}{8}$	$\frac{1}{5}$	4	4	$1\frac{3}{4}$	$\frac{1}{4}$
5	$3\frac{1}{8}$	$1\frac{1}{8}$	$\frac{1}{4}$	5	$3\frac{1}{4}$	$1\frac{1}{2}$	$\frac{1}{4}$
6		$1\frac{1}{2}$					
7	$2\frac{1}{4}$	1	$\frac{7}{8}$				
The Bars.							
8	$6\frac{1}{4}$	$\frac{1}{4}$	$\frac{2}{3}$				
9	$5\frac{1}{2}$	$\frac{1}{16}$	$\frac{1}{16}$				

All the measurements from the mould are taken at the lips or the matrices, except in the case of the breadth of No. 6, which is taken at the bottom of the matrix.

largest of the three axe-like tools, being about $3\frac{1}{8}$ inches in length and about $1\frac{5}{16}$ inches in breadth, is smaller than the smallest of the "Maidens" axes both in length and breadth. These measurements are quite in keeping with the idea already expressed, that in this country axes of the smaller sizes may have differed from the larger ones in having the sides straight instead of curved.

Several stone moulds for casting bar-like objects have been found in Scotland. The mould found at Marnoch, and now in the Banff Museum, which is made out of a flattened oval piece of sandstone, measuring $9\frac{1}{8}$ inches in length, $6\frac{3}{4}$ inches in breadth, and from 2 to 3 inches in thickness, bears on the obverse a matrix for a flat axe, and on the reverse matrices for a bar and for a circular ring of the type displayed by the mould from Kilmaihie, Inverness-shire, which has an annular matrix on both the obverse and the reverse. The outside and inside diameters of the ring on the Marnoch mould measure about $3\frac{7}{16}$ inches and $2\frac{9}{16}$ inches respectively; the ring produced would be about $\frac{5}{16}$ of an inch in depth, and roughly semicircular in section. The bar is 8 inches long,

$\frac{9}{16}$ of an inch deep, and $\frac{1}{4}$ of an inch broad at the bottom of the matrix. The New Deer mould has matrices for a flat axe on the obverse, for a flat axe and a bar on the reverse, and for a bar on one side. A mould from Benachie, Aberdeenshire, has matrices for two bars, $6\frac{1}{2}$ by $\frac{11}{16}$ by $\frac{7}{16}$ of an inch and $2\frac{1}{4}$ by $\frac{5}{16}$ by $\frac{1}{4}$ of an inch respectively, on the one side of the stone. One from Alford, in the same county, has on the top side of the stone matrices for two bars 10 by 1 by 1 inch and 4 by $\frac{3}{8}$ by $\frac{5}{16}$ of an inch respectively, for a flat crescent-shaped object, and for an object shaped like an elongated oval drawn in waist-like at the sides. On the under side of the stone there is a shallow groove, $7\frac{3}{4}$ inches by $1\frac{1}{4}$ inches by about $\frac{1}{4}$ of an inch, which broadens out at one end to form a circular depression of about $1\frac{1}{4}$ inches diameter. Another mould, from Orkney, is incomplete, but shows matrices for two straight bars on the obverse, for one curved bar on the reverse, for a small Latin cross on one side, and for a straight bar on the opposite side. The last specimen probably belongs to a later period than those bearing matrices for flat axes, the cross indicating perhaps an Early Christian or mediæval date. Those last three moulds are in the Scottish National Museum, and the first two of them, it will be seen, come from the same part of the country as the flat axe moulds.

It is impossible to say whether the two bar-like matrices on the mould under review were simply for casting ingots, or bars which were afterwards fashioned into some other object. As they stand, they do not resemble any known type of implement or ornament of the Bronze Age. They could easily have been made into chisels, but to have done so would have been a very great waste of what at that period must have been a very scarce and valuable metal. Still, a blunt chisel or punch, approximating in size to the largest bar on the mould, has been recorded and described by Dr Joseph Anderson.¹ It was found at Dumfries, and was of cylindrical shape, tapering from near the middle to a blunt point. It measured $6\frac{1}{4}$ inches in length, and $\frac{3}{4}$ of an inch in thickness. The large size of the bars cast in the Alford mould seems to preclude of their being anything else but ingots. If the two bar-like

¹ *Proc. Soc. Antiq. Scot.*, vol. xxviii. p. 207.

matrices on the Fouldland mould were for ingots, a more handy and suitable shape could not have been devised, whether for convenience in transport or for remelting.

That both the Marnoch and the English specimens bear matrices for a large circular ring as well as for flat axes, is evidence that armlets of cast bronze of the completely annular form were contemporary with the earliest type of bronze axe in Britain, but it is found that the ring with the break is more common than the complete ring that would have been produced by each of these two moulds. It is reasonable to suppose that the first bronze rings made by man would be fashioned by the bending of a straight rod or bar, the circular matrix for casting the complete ring being a later development. It is also reasonable to believe that the earlier types of such bars may have been of quadrangular section, rounded bars (if ever such were cast) belonging probably to a later period. Thus, the two bar-like matrices on the Fouldland mould may have been intended for casting bars of gold or bronze which afterwards were beaten and bent into the shape of a ring, which was quadrangular, semicircular, or circular in section. If penannular rings with expanding ends are excluded, it is found that there still remains a not uncommon type of bronze ring or armlet which is semicircular in section, or perhaps better described as circular in section but flattened on the inside. The fabrication of armlets of this shape from bars cast in this mould would involve very little working, owing to the depth of the bars being less than their breadth. All that would be required would be the rounding of the corners. The longest bar from the mould would be $6\frac{1}{4}$ inches in length. A bar of this length would allow of the manufacture of a ring with an inside diameter of almost 2 inches, without reckoning any lengthening of the bar by hammering. The quantity of metal in such a bar would easily allow of its being beaten out 2 or 3 inches more in length, and so would permit of the production of a ring almost identical in shape and size to the three fine Scottish examples figured in *Scotland in Pagan Times*, pp. 58, 59, and 60. Dr Anderson there mentions four different finds of this type of ring:—from Stobo, Peebles-

shire, from Crawford, Lanarkshire, from Kinneff, Kincardineshire, and from Ratho, Midlothian. Some of the relics said to have been found associated with them point to their having belonged to a later phase of the Bronze Age, but Dr Anderson points out that the data are not quite trustworthy. However, Scotland has produced two well-authenticated cases of such rings having been found associated with flat bronze axes. A penannular ring of bronze was found along with the hoard of five flat axes at the "Maidens," Ayrshire, which has already been referred to. The Migdale hoard, described by Dr Anderson, contained three pairs of plain and one pair of ornamented bronze armlets, besides many other bronze and jet objects.¹ None of the rings from the "Maidens" or from Migdale appears to have been a circular casting. They all have a break, which shows that apparently they were made by bending straight rods or bars. In Spain, rings of the same shape but of copper were often associated with the flat axe. Quite a number of men's graves explored at El Argar contained a flat axe, a knife dagger (*poinçard*), and a bracelet, all of copper.² Some of them also contained other ornaments, and one had a silver bracelet as well as one of copper. Several of the bracelets were found still encircling the bones of the arm of the skeleton.

While the two matrices may have been used merely for the casting of ingot bars, they might have been meant for the reception of superfluous molten metal, that is, for the metal left over after the filling of the matrix for the axe in the course of manufacture. The bars could also have been used for the manufacture of chisels. It is, however, far more probable that these matrices were for fashioning bars intended for the manufacture of rings or armlets of the type of the Stobo and plain Migdale specimens. The mould from Molitg-les-Bains, France, besides the two matrices for flat axes had one for a bar-like object which was supposed to have been used in the manufacture of armlets. One of the moulds from El Argar, Spain, bore matrices for three bars which

¹ *Proc. Soc. Antiq. Scot.*, vol. xxxv, p. 266.

² Siret, *Les premiers Âges du Métal*, texte, pp. 145, 146, 147, album pls. 29, 30.

were considered suitable for being made into chisels, arrow-heads, bracelets, or awls.

As flat axes have been assigned to the early part of the Bronze Age, and as there is no evidence of the bars belonging specially to a later period, this mould may safely be considered to have been made and used during the Scottish Early Bronze Age. It is to be expected that the bronze merchant or founder at that time would find it necessary to travel over the country for purposes of his craft. It would be much more suitable for him to go to his customers than for his customers to come to him from great distances. The mould itself suggests that it belonged to an itinerant bronze-founder. The stone of which it is made is not found in the district. Slate and whinstone are the underlying rocks. Sandstone is found some ten miles distant, but its colour is a darker red than the sandstone of this mould. This perhaps can hardly be considered an argument in favour of its owner being a travelling merchant, but it is of interest to note that the material of which the mould is made is foreign to the immediate neighbourhood of where it was found. The reason that the surface of the stone, even the sides, is so fully occupied by matrices, may be that this particular piece of stone was specially suitable for casting purposes, but it seems more probable that the shape and size of the mould was dictated more by reason of the necessity of having it in a light, handy, compact, and portable form. If the founder had had his place of manufacture fixed in one locality, it is to be expected that he would have had his various moulds all on the top surface of several moulding stones, and not on four sides of the same stone, as in this case. There is scarcely any doubt that this mould was once the property of a travelling bronze-founder, who, on the spot, could produce an armlet, or one or more of a variety of axes, which the customer desired or could afford to buy; it is unlikely that such a merchant would carry many axes in stock, bronze being too scarce and valuable a commodity in Scotland during the early part of her Early Bronze Period. If the customer possessed a broken or worn axe, the founder could there and then remelt and recast it.

From a survey of the fifteen flat axe moulds recorded from the British Isles, it is seen that the only other objects associated with them on the moulds are bars in three Scottish cases, rings on one Scottish and on an English specimen, and a knife and looped palstave each on an Irish example, all of which, with the exception of the looped palstave, are recognised as quite typical of the Early Bronze Age. As for the Irish specimen with the palstave, one of the two flat axes on it is of an uncommon flat-faced type, which may belong to a somewhat later period, and so become reconciled with the looped palstave. Regarding the Continental examples, it is found that what applies to the British flat axe moulds applies to them. Only matrices for bars and for knives or daggers are found associated with flat axe matrices.

The district in which this mould was found has produced large numbers of stone implements, but I have been unable to learn that any of bronze have been found there. The scarcity of bronze objects may be accounted for by their being easily noticed, and so readily picked up early in the history of the tilling of the ground. A bronze object would catch the eye at once, and being of some apparent value it would be removed. I have heard of a bronze axe having been secured by a local blacksmith, who said he would try and make it into a "southerin' bolt." Besides this mould I have a small whetstone of reddish quartzite, of the type that is usually attributed to the Bronze Age, which was found a couple of miles to the north-west, on the other side of the hill.

Though bronze implements and weapons are very scarce in this district, still we see that Bronze-Age man has left behind him some typical utensils, as well as numerous graves which have from time to time been turned up, all which is clear testimony to his once having dwelt in the glens of Foudland.

III.

NOTES (1) ON TWO TRIBULA, OR THRESHING-SLEDGES, HAVING THEIR UNDER SURFACES STUDDED WITH ROWS OF CHIPPED FLINTS, FOR THRESHING CORN ON A THRESHING-FLOOR, FROM CAVALLA, IN EUROPEAN TURKEY, NOW PRESENTED TO THE MUSEUM: AND (2) ON PRIMITIVE IMPLEMENTS AND WEAPONS MADE OF FLAKES OF FLINT OR OTHER STONE SET IN WOOD OR OTHER SUBSTANCES. By LUDOVIC McLELLAN MANN, F.S.A. Scot.

SUMMARY.

I. *The Flint-toothed Threshing Sledge.*

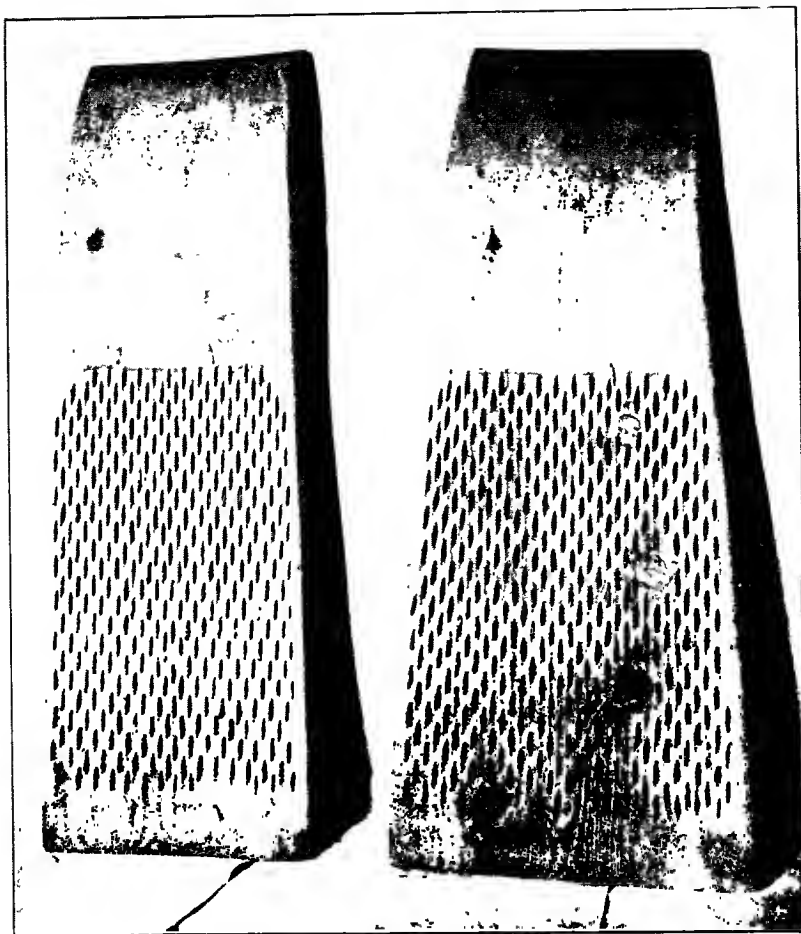
Method of using it—Its dimensions—The threshing-floor—The white ox—The driver—Horses sometimes employed—Teeth sometimes of iron. Stone teeth secondarily worked—How trimmed. The method of fixing the teeth—The *tribulum* probably never employed in Britain—Ancient British harvesting methods—Eastern methods mentioned in the Bible—Classical writers refer to the *tribulum*. This implement not apparently in vogue at Thebes in the 16th century B.C.

II. *Primitive Implements and Weapons made of Flakes of Stone set in Wood and other substances.*

Their classification and purpose—Knives and swords—Ancient American—Ancient Prussian—Javelins, spears, and harpoons—Australian—Ancient Scandinavian—Mexican—Saxs and sickles—Prehistoric Italian—Ancient Egyptian—Discoveries of flint flakes in sets—In Northern Europe—In Britain—Fish-hooks—The past and present methods of fixing the teeth contrasted.

Before I left last summer for a journey through European and Asiatic Turkey, Dr Joseph Anderson suggested that I might endeavour to secure a specimen of the flint-toothed threshing-sledge, one of the most interesting of the surviving implements in the construction of which flint is used. In this I succeeded, and I have had the pleasure of presenting two specimens (figs. 1, 2) to the National Scottish Collection. They are probably the first examples sent to Scotland.

As is well known, the threshing-sledge has been in use from very early times in the East, and an instrument which must have been very similar to, if not identical with, the present-day threshing-sledge is mentioned in the Bible and in other ancient writings.



Figs. 1 and 2. Two Threshing-Sledges from Cavalla, each about five feet in length, showing the under surfaces set with chipped flints.

The sledge is drawn by draught animals over the material to be threshed, which is spread in the open air upon a prepared floor. The sledge, by the bruising action of its teeth, separates the grain from the ear. It also at the same time cuts the straw into short lengths.

The modern threshing-sledge, armed on the under side with flakes of stone, and having a different name in various parts of Asia and the Mediterranean countries, seems to differ in no way in each country, and must be almost identical with the *tribulum* of the Romans, and may have been like the *moreg* of the Hebrews.

The machine is still used in some parts of Turkey, and is there called "duyen." It varies slightly in size, and is a slab of wood usually 5 feet long, 3 inches thick, and varying in width from $1\frac{1}{2}$ to 2 feet. It is rectangular, but narrows slightly towards the front portion, which is recurved upwards a little. On the upper side are two cross bars, usually of wood, rarely of iron, while about three-fourths of the under face (comprising the middle and back or rear portions) is set with about 350 flakes of flint, quartz, or other hard stone. The pieces of stone protrude from the face about $\frac{1}{2}$ to $\frac{3}{4}$ of an inch, and are set at short distances apart and in diagonal rows. The specimens obtained for the Scottish National Museum differ slightly in size; the larger was said to have been used with a horse, the smaller with a couple of oxen. I bought them on 14th October 1903 from Mr Almed Hamdy, at his farm of Tcharpinti, about two and a half hours' drive north-east of Cavalla, European Turkey. While the specimens bear traces of wear, they are in good condition. Mr Hamdy had several toothless specimens in his stead. It is no doubt a weakness of the "duyen" that the teeth break and become dislocated after much usage.

The "duyen" is used on a prepared circular space of ground. The space is cleared and smoothed, and is then covered with a plaster of reddish moist clay, which soon dries and becomes as hard as brick. The larger the area, the more expeditiously is the material threshed. Round the outer portion of the area the grain (barley, rye, or oats) or beans is strewn—of course each crop being operated separately. The

stalks are placed, to a depth of about $1\frac{1}{2}$ feet, parallel with the radii of the circle, with the ears or seed receptacles inwards. The sledge is then driven round, over the material, yoked usually to a pair of white oxen—the white ox is preferred, as it has a lighter tread than the heavier and slower-moving black ox. The driver occupies the front portion of the sledge, while a large stone is placed at the other end. The stone gives additional weight to the back portion of the sledge, and allows the machine more easily to surmount obstacles such as extra high piles of straw, when, at such a juncture, the driver moves backwards for the moment and lightens the front portion as it rises. The Turkish boy is often allowed to take the place of the stone, much, of course, to his delight. After about half an hour the direction of the machine is reversed. As the sledge is driven round, an assistant is busy with a wooden fork turning the material, exposing and re-exposing the ears to the action of the flint teeth. The machine is occasionally stopped for a few minutes, when the opportunity is taken to build up the material, which should lie about 2 feet deep. Three or four times is this building up necessary. Sometimes on the same threshing-floor two sledges are used at the same time, each going in opposite directions, and of course following paths at different distances from the centre of the circular space. In this case two assistants are employed to turn the material. Where the amount of material to be threshed is very great, the floor is made so large as to accommodate at one time three, four, and even many more machines. From time to time the grain and chaff are swept into a heap at the side and the straw or stalks into another. After a sufficient number of successive rounds of the sledge there is found to be no grain in the stalk, and the operations, it is said, are so perfected that scarcely a single grain is lost. A stone roller is sometimes used to press down the straw first of all, especially if the material is difficult to work, as is the case should many weeds be present; and again, at the finish, the roller is used to bruise and loosen any grain which may still adhere to the ear.

While oxen are often employed to draw the machine, horses are

sometimes preferred, as they go more quickly and their feet assist the tritulating process more than the feet of the oxen. The horse employed is a small hardy animal called the *Hergale*. It is seldom used for other work, and most of its energy is used up in drawing the threshing-sledge, which is, of course, a heavy drag. At times two horses are yoked together and draw two sledges. The smaller size of sledge is used in this case. The horses are said to be preferred unshod, but as a matter of fact the peasants are often too poor to have their horses shod.

In some parts of Turkey the sledge is armed with teeth of iron instead of flint or stone. The iron teeth seem to be large nails turned over. It is said that the stone teeth do the work better. If the iron teeth are placed as closely together as can be done with the flint teeth, it is found that the wood tends to split. The iron nails must therefore be set well apart, at intervals of about 4 inches, rendering the iron-toothed threshing machine less efficient than the machine with stone teeth. Again, the iron nails being so far apart do not cut the straw well, and the oxen do not care for the long pieces of straw which are produced. Another disadvantage of the iron nail is that it requires re-bending occasionally.

The "duyen" is made in various places in Turkey. The Pomaks, a people of Bulgarian origin, and who speak that language, make the machines near Eskidsche (Xanthi), where wood is plentiful.

As the flint teeth are of considerable value, and as they are apt to fall out when the machine is in use, a note is taken before beginning work for the day of the number of missing teeth, and a similar reckoning takes place at the close of the day's labour. If any should have gone amissing that day a lookout is kept, and the dropped teeth are often recovered at some stage or other of the operations. Lost teeth recovered are occasionally re-inserted by fixing them with rags.¹

¹ Specimens of the teeth of the "duyen" used in threshing operations in the neighbourhood of Smyrna, and brought accidentally to Scotland with harvested material, have been presented to the National Scottish Collection. *Proceedings*, vol. xxxvii. p. 241.

Recent writers on British Prehistory¹ refer to "the practical certainty that flakes for the *tribulum* would not possess fine secondary workings on their edges."

Now, looking to the severe work to be done by the flakes, it seems, on the contrary, to be probable that anciently every means of strengthening the exposed or bruising edges, if not also the other sides, of the flakes would be adopted, and this could best be done by trimming the edges. As a matter of fact the modern flint flakes are finely clipped by a secondary process, and this flint-knapping operation I witnessed at Broussa, an inland town in Asiatic Turkey, where some of the sledges are made. The workman squats on the earthen floor of his workshop. To his right, conveniently placed, lies a supply of roughly-shaped flakes. The flakes may be of some hard stone other than flint, and the material I saw used was quartz. Before him is an upright wooden stake, 3 or 4 inches in diameter, firmly embedded in the ground and rising above it about 7 inches. Inserted firmly, centrally and upright on the top of the stake, is a long iron nail with a small squarish head. The head of the nail is his anvil, and resting with his left hand the edge of the flake upon it, he strikes the portion of the edge to be removed with a mallet held in his right hand, and having a 6-inch shaft and a rather heavy iron head. Curiously, the quartz seemed to have worn away the iron to a considerable extent, as the iron head of the mallet I saw used had a large hollow worn in it on one side. At each stroke the position of the flake is slightly changed so as to bring another and neighbouring portion of the edge into the line of action of the mallet. In this manner working round the flake a finely wrought and usually symmetrical edge is obtained. When finished, the flakes are roughly oval, about 2 inches long, $1\frac{1}{2}$ inches broad, and $\frac{1}{4}$ inch thick. Some specimens made in my presence are now in the National Scottish Collection.

I was informed in European Turkey that the prepared slab of wood

¹ *Neolithic Man in North-East Surrey*, by Messrs Walter Johnson and William Wright, 1904, p. 85.

is immersed in water for about ten days. When thus softened and swollen, holes are punched, or cuts made, in the portion which is to be armed with teeth, and the teeth inserted. The slab is then allowed to dry in the sun, when it gradually shrinks, causing the teeth to become firmly fixed in the wood. In Bronssa, I was informed, however, that the method there practised is to use the wood green, and that as it dries the teeth become securely fixed in it.

Some writers have been bold enough to hint that the *tribulum* was used in Roman, and even in Pre-Roman, Britain. The evidence in favour of a Romano-British *tribulum* consists mainly of one fact referred to by Sir John Evans,¹ that rudely-chipped splinters of flint have been found in South Britain, on sites of Roman occupation: for example, in Wales, in Sussex, and at Reculver and St Albans. Again the same writer,² when discussing the harvesting methods of the Britons, states that "whether they made use of the *tribulum* before Roman times is doubtful."

I think, however, it can be shown to be extremely improbable that the *tribulum*, or even the treading-out process by animals' feet, was employed at any time in the British Islands. Pytheas, writing in the fourth century B.C., Belerion a little later, and Diodorus Siculus in the first century B.C., allude to the contemporary British methods of harvesting, and agree in mentioning that the ears of corn were cut off and stored and taken out of store from time to time as supplies were wanted. Presumably the straw, if preserved or used at all, was kept apart.

Now, the *tribulum* performs at one operation two functions—by bruising the ears or seed receptacles it loosens the seed from its covering, and it cuts up the straw. If the thresher has, however, to deal only with detached ears instead of ears and straw together, he has less inducement to use a *tribulum*-like machine, and therefore probably he did not use one in such circumstances.

In the lands bordering upon the Mediterranean, and in the East,

¹ *Anc. Stone Imp.*, p. 283.

² *Anc. Bronze Imp.*, p. 202.

the threshing-floor, as can be demonstrated, was in the open air from apparently the earliest times, but in Britain and the north-west of Europe the colder, more humid and changeable climate would render impracticable, as a rule, any such open-air threshing processes.

Information as to the methods of grain-threshing in ancient times in the East may be gleaned from various passages in the Bible and in classical writings, and from ancient Egyptian sculpturings.

While the barn was clearly a covered-in space, the threshing-floor was in the open air. The building of an altar on a threshing-floor¹ may indicate this, and the references to the wind carrying off the chaff from the floor point to the same conclusion.² Good evidence that the operations were carried on in the open air is that oxen and heifers were used, and are referred to as treading out the corn.³

Iron seems sometimes to have been anciently used for the teeth of the threshing implement.⁴

Varro (B.C. 60—A.D. 28) in one brief passage⁵ tells that "they make a table (*tabula*) pointed with stone or iron, upon which is placed a driver and a great weight, and which is drawn by draught animals yoked together in order to break down the ears of grain." Other ancient writers refer to the same operation.

Only one threshing process—the treading-out by animals—is represented in the detailed scenes of harvesting represented on the tombs at Thebes⁶ assigned to the 18th dynasty—*circa* 1500 B.C. There seems indeed to be no evidence of the use of the *tribulum* in pre-Roman Egypt. In modern times in Egypt a sledge with circular iron plates, the *moreg*, has been used.⁷

If the *tribulum* had been employed in countries having intercourse with Egypt during pre-Roman periods, one is, on first consideration, inclined to believe that it would soon have been introduced into the

¹ 2 Samuel xxiv. 21; 1 Chron. xxi. 18.

² Hosea xiii. 3.

³ Deut. xxv. 4; Hosea x. 11; 1 Cor. ix; Micah iv. 13.

⁴ Amos i. 3.

⁵ *De Re Rustica*, i. cap. 52.

⁶ See figs. in Wilkinson's *Anc. Egyptians*, vol. ii. pp. 471, 472, 474, 475, 477.

⁷ Wilkinson's *Anc. Egyptians*, pp. 422–3.

Nile Valley, as involving a method of threshing preferable to that of the simple treading-out of the corn by the feet of animals. But as the teeth of the *tribulum* cut up the straw as well as loosened the grain from the ear, it is conceivable that when the straw was desired uncut, either the flail or other hand process was employed, or that the animals were driven over the heap to triturate the material with their feet. Thus, while the treading-out and *tribulum* processes may have been known to the same people at the same period, yet only the one or other of the methods may have been adopted, according as the straw was to be preserved intact or cut up into short lengths.

It is somewhat astonishing at first sight that the threshing-sledge, which receives such hard usage, should have its teeth fixed in the wood without cement. The art of setting flakes securely in wood with the assistance of cement, resin, or other fixing substance may have been known to the early *tribulum* makers before a method had been discovered which rendered the cementing-in process unnecessary. The idea of an implement built up by the insertion of many pieces of stone in a framework of wood or other suitable material prevailed anciently in Egypt and in pre-historic times throughout Northern, Central, and Southern Europe, and until recent times in Northern and Central America, and Anstralia. The *tribulum* is one of the few surviving instances which demonstrate the power of the persistence of ancient and primitive methods. We have no positive knowledge of the place and period of its origin, but that it cannot much longer survive is certain.

In this connection it may not be uninteresting to review briefly the various implements and weapons in the construction of which pieces of flint or other stone have been used, fixed in a setting or frame of wood, bone or horn. These primitive implements and weapons may be classified as follows, according to the purposes for which they were employed:—

1. *In the chase and in warfare—*

As spears, swords, or javelins.

II. *In fishing*—

As harpoons or spears and as fish-hooks.

III. *In industrial operations*—

As saws, knives, and cutting tools.

IV. *In agricultural operations*—

As sickles and threshing-sledges.

Knives and Swords.—Prescott testifies¹ that the Mexicans “bore a two-handed staff, about $3\frac{1}{2}$ feet long, in which, at regular distances, were inserted transversely sharp blades of *itztli*. The mineral *itztli* (obsidian), the hard vitreous substance already noticed, is capable of taking an edge like a razor, though easily blunted.”

Sir Daniel Wilson² mentions that “the historian of the Iroquois, when describing their arts and manufactures, remarks that in the western mounds rows of arrow-heads of flint-blades have been found lying side by side, like teeth, the row being about 2 feet long”: and quotes as follows from the historian—“This has suggested the idea that they were set in a frame, and fastened with thongs, thus making a species of sword.”

The same writer further³ mentions that the inhabitants of the coast of Yucatan had, as Herrera relates, “swords made of wood, having a gutter in the fore-part, in which were sharp-edged flints, strongly fixed with a sort of bitumen and thread.”

In some specimens of ancient Scandinavian knives the “flint flakes are let in on both edges of the blade.”⁴

In the Berlin Museum, and supposed to have been found in Prussia,⁵ is a lanceolate piece of bone, probably a knife, about $7\frac{1}{4}$ inches long, approximately oval in section, $\frac{1}{4}$ inch thick, and at the utmost $\frac{1}{2}$ inch wide. In a narrow groove which has been worked along one of the

¹ *History of the Conquest of Mexico*, J. F. Kirk's revised edition, p. 210.

² *Prehistoric Man*, vol. i. pp. 225-6.

³ *Id.*, vol. i. p. 226.

⁴ Evans' *Anc. Stone Imp.*, p. 294, refers to *Prim. Ants. of Denmark*, p. 17. Nilsson's *Stone Age*, pl. vi., 125, 126, and to Madsen's *Afbildninger*, pl. xl.

⁵ *Archæol. Anth.*, vol. v. p. 234, quoted in *Anc. Stone Imp.* p. 294.

narrow sides is inserted a series of thin flakes of flint, evidently chosen carefully so as to be of uniform thickness, and so dexterously fitted together that their edges form a continuous sharp blade projecting about $\frac{3}{16}$ of an inch from the bone.

Javelins, Spears, and Harpoons.—Among the Australians there are, or were, used small splinters of flint and quartz secured to wooden handles by "black-boy" gum, and forming the teeth of rude saws and the barbs of javelins.¹ Again,² it is mentioned that some of the Australian savages about King George's Sound make knives or saws and spears by attaching a number of small flakes in a row in a matrix of hard resin at one end of a stick. Spears from Australia, armed at the sides with quartz chips, are in the Blackmore Museum.³

Harpoon heads of bone, 6 to 10 inches long, with a groove on one side, and sometimes on two sides, in which, with the help of bitumen, chips of flint are fixed at short distances apart, the edges of the flakes outwards, have been found in Scania, in the peat bogs of the West Coast of Sweden, and in the Island of Oland.⁴ The Scandinavian harpoon differed from most other implements in which more than one flake of stone or flint was employed, in having the top portion of bone made separately from the lower section of the shaft, which was probably of wood.

Like the Australian spears, some of the ancient Mexican weapons had the wooden shaft or body of their implements and weapons in one piece, and in this was set numerous obsidian flakes. The shaft, when provided (sometimes on one edge and sometimes on both edges) with an armature of obsidian chips, was used as a sword, but when the end of the shaft was, in addition, furnished with a sharp tip of obsidian, the weapon was employed as a spear, dart, or javelin. The splinters of obsidian were usually set in grooves a short distance apart, the sharp

¹ Wood, *Nat. Hist. of Man*, vol. ii. pp. 36-38, referred to in Evans' *Anc. Stone Imp.*, p. 227.

² In *Anc. Stone Imp.*, p. 293.

³ *Flint Chips*, p. 218.

⁴ Nilsson's *Stone Age*, pp. xlvii.-xlviii., pl. vi. figs. 124-126, referred to in *Flint Chips*, pp. 218 and 300.

edges outward, but sometimes, according to Hernandez, the splinters were fixed in holes with a kind of gum.¹

Saws and Sickles.—Dr Robert Munro² has brought to light the existence in a private collection in Italy of a prehistoric saw or sickle. It consists of several serrated flint flakes fixed in a row in a semi-circular wooden handle, and was found many years ago at Polada.

In Egypt, during the fourth and many succeeding dynasties, curved pieces of wood with grooves into which were cemented rows of notched flint flakes were used, probably as sickles, and possibly as saws. Pictorial representations of them have been disclosed, and actual specimens, some complete, have been discovered.

As the shape of these implements very much resembles that of the jawbone of a horse or other large quadruped, it is not impossible that such a bone with its complement of teeth gave the inventor the idea that a useful implement could be produced were he to copy the shape in wood and substitute for the teeth a row of flint flakes. Professor Petrie³ described the notched flakes used in one specimen as "fine and thin," and that "the groove is filled with a grey brown cement to hold the teeth, formed of clay or mud and gum or gluc. A quantity of this cement is smeared over the junction of the wood and the teeth, and resembles, and apparently does some of the duty of, the gums in animals. The teeth are buried in the groove, which in the Kahun examples was cut by metal chisels, and, so far as can be seen, the groove did not exceed half an inch in depth. A quarter of an inch of the flake was overlapped by the 'gum,' and about the same quantity projected. These measures are for the centre of the groove."

Isolated notched flint flakes, conjectured to have formed part of some

¹ *Rer. Med. Nov. Hist. Thes.*, Rome, 1651, mentioned in *Flint Chips*, p. 297, in which work is also given a full list of reference to drawings of the Mexican obsidian-armed sword in Lord Kingsborough's *Ant. of Mexico*. Attention is also called in *Flint Chips*, p. 297, to General Pitt-Rivers' description of the same weapon in *Prim. Warfare*, in the *Jl. Roy. United Ser. Inst.*, Dec. 1867, p. 635.

² *Preh. Prob.*, p. 309.

³ *Illahun, Kahun and Gurob*, 1889-1890, p. 54, see pl. vii., No. 27.

such implements, have been found on the supposed site of Troy, and at Helouan and other places in Egypt.

Crescent-shaped serrated blades of flint, probably used as knives and at times as saws, which have been discovered in Northern Germany and in Scandinavia, are frequently found in pairs, one being smaller than the other, and Professor J. J. Steenstrup mentions that many appear to have had their convex edges inserted in wooden handles. They were probably often so used in sets of two or even more blades.¹

If more than one serrated flint flake (excepting the rare hollow serrated scraper of flint) is found in a deposit, even in Britain, it is not impossible that the flakes may have formed part of such a compound implement.

The following cases of the finding of a plurality of serrated flints on British sites may therefore be of interest.

Place.	Number of Serrated Flakes.	Reference.
Barrow at Rudstone, E. R. of Yorkshire.	79	Greenwell's <i>British Barrows</i> , p. 262.
Another at same place.	5	<i>Ibid.</i> , p. 252.
Another at same place.	Seven with a jet armlet, all "mixed with the material of the hill"	<i>Ibid.</i> , p. 251, and Edward Tyndall in <i>Arch. Jl.</i> , vol. xxvii p. 74.
Barrow at Seaford	5	<i>Suss. Arch. Collns.</i> , vol. xxxii. p. 175.
Wigtownshire.	Five, with other flints and an urn.	Record not yet published.

Fish Hooks.—From a grave in Greenland is recorded "a fishing hook, the stem formed of bone, and the returning point made of flint bound

¹ Evans, *Anc. Stone Imp.*, p. 297.

at an acute angle to the end of the bone."¹ The fishing hooks of modern primitive tribes, to be seen in most ethnographic collections, have, however, seldom any of their parts of stone, the material of the barbs being either bone or shell.

Mr W. J. Lewis Abbott² suggests that the long, very narrow, pin-like, secondarily worked flints, now so frequently found in many parts of the British Islands and elsewhere in Europe, and in Asia and Africa, may have been used to form fish hooks.

On a prehistoric site in Wigtownshire, I discovered in 1901 two examples of these long, very thin, secondarily worked flints lying only two or three inches apart—that is, so closely together as to give rise to the suggestion that they had formed parts of a composite flint implement.

It is possible that several of such pin-like flints may have been inserted more or less upright in a frame or plaque of wood or bone, and used in some heckling or teasing operation, or in the converse process of building up a fabric or ligament, as in the modern instances of lace-making and plaiting-work.

It will be seen that there is evidence that in some of these cases the pieces of flint or other stone were fixed in a frame by means of thongs or some cementing material, and that the methods of prehistoric and modern primitive peoples do not appear to embrace the ingenious method in use by the modern makers of the flint-toothed threshing-sledge, who either use the wood green, or moistened before the insertion of the splinters of stone, and who rely upon the subsequent shrinking of the wood. It would be hazardous to state, however, that this last-mentioned method was unknown in prehistoric times, as naturally implements containing teeth inserted without cementing material would not so readily survive in their entirety to demonstrate the exact method of their fabrication.

¹ Klemm, *Cultur Wissenschaft*, vol. i. p. 61, and quoted by Evans, *Anc. Stone Imp.*, 2nd edition, p. 294.

² *Jl. Anth. Inst.*, vol. xxv. pp. 122, 137. and referred to in Evans' *Anc. Stone Imp.*, 2nd edition, p. 325.

IV.

AN ACCOUNT OF THE ABERACH-MACKAY BANNER, NOW EXHIBITED
IN THE NATIONAL MUSEUM. BY REV. A. MACKAY, WESTERDALE
MANSE, HALKIRK.

The earliest reference to the Aberach-Mackay Banner of which we have any knowledge, meantime, is in the article on Tongue parish in the *First Statistical Account*, written about 1792 by the Rev. Wm. Mackenzie, and is as follows:—

“There is a cave in the rock upon which the Castle [Varrich, near Tongue] is built called *Leubuidh Evin Abarnich*, i.e. John of Lochaber's bed, whither he is said to have retired in times of danger. A family of Mackays is descended from him, and are reported still to have in their possession his banner, with the motto wrought in golden letters, *Biodh treun—Biodh treun*, i.e. Be valiant.”

The writer of this article was inducted minister of Tongue in 1769, and laboured in that parish till his death in 1834; but before his settlement at Tongue he was minister at Achness on Strathnaver from 1766 to 1769, as we are informed by his descendant, James Macdonald, Esq., W.S., Edinburgh. His long and intimate acquaintance with the Mackays both on Strathnaver—where he had a daughter married and settled—and at Tongue, Lord Reay's seat, coupled with his taste for family lore, as we gather from Sage's *Memorabilia Domestica*, give considerable weight to his passing reference to the Aberach-Mackay banner. When he says that the banner of John Aberach was then reported to be in the possession of his descendants, he was but relating what was traditionally believed during the latter half of the 18th century, viz., that this banner was the battle-flag of John Aberach, who led the Mackays at the battle of Druim-nan-Coup in 1433 and became the progenitor of the Aberach-Mackays. The banner has occasioned a Gaelic proverb known throughout the north of Sutherland, and in daily use among Strathnaver people at the present day. When a Strathnaver man would express in Gaelic the idea conveyed in the English saying “as old as the hills,” he invariably uses the phrase *cho seann ri bratach*

nan Abrach (as old as the Aberach banner). The banner which is shown to be very old by this Gaelic proverb, is made to date from the earlier half of the 15th century in the tradition recorded by the Rev. Wm. Mackenzie; while both proverb and tradition agree in saying that it was the flag of the Aberach-Mackays.

In the *House and Clan of Mackay*, published in 1829, the historian relates¹ that the Aberach "family-colours" were then in the possession of an Aberach, residing at Thurso, called by the Highlanders *Hutcheon na Brataich* (Hugh of the banner). Both in the body of the book and in the genealogical account, he shows that this Hugh was the lineal descendant of Neil Williamson Mackay, who was killed at Thurso in 1649. He also states that the said Neil obtained possession of the said family colours, which rightfully pertained to his uncle Murdo Mackay, the Aberach chieftain, and that in consequence of this act of usurpation, bad feeling was engendered between uncle and nephew, but that Neil and his descendants continued to retain the banner henceforward. From this it appears that the banner descended lineally from father to son, and was always possessed by the Aberach chieftain for the time being until shortly before 1649, when it passed into the possession of Neil Mackay. This also agrees with traditions among Strathnaver people at the present day.

We offer the following explanation of the transference of the banner from the family of Murdo the chieftain to that of Neil his nephew. The Reay family and its adherents supported the falling cause of Charles I. and Charles II., while the Sutherland family and its adherents adopted the opposite and winning side. As a result of this unfortunate and fatal policy, the estate of Donald, Lord Reay, became so impoverished that the lands of Strathnaver and others were appressed for debt, and charters over them were obtained by adherents of the house of Sutherland. But the Aberach-Mackays, who claimed the upper half of Strathnaver as theirs in virtue of the grant² obtained by their progenitor

¹ *History of the House and Clan of Mackay*, p. 288.

² Vide *Earldom of Sutherland*, p. 66.

from his elder brother Neil Vass about 1437, energetically resisted the filching of what they considered their property. In this struggle Neil Mackay, nephew of the chieftain, was the leading spirit so long as he lived, and after his fall in 1649, the conflict was continued by his sons.¹ In these circumstances it was but natural that Neil and his sons should possess themselves of the banner, as they were the virtual leaders of the Aberach-Mackays. But it is also quite likely that this caused some friction between them and the family of the chieftain.

The writer of this paper was born and brought up at the foot of Strathnaver, was intimately acquainted with old people who had been driven from the heights of the Strath in consequence of the "Sutherland clearances" in the second decade of last century, and was frequently an interested auditor of their tales and traditions. Many of them never read the *History of the House and Clan of Mackay*, but they were unanimous in saying that the Aberachs had a banner, and that this banner was safely preserved at Thurso during the seventies of last century. Of this they had no doubt at all. To one of these old people, William Mackay, army pensioner, Dalcharn, Bettyhill, we must make more particular reference.

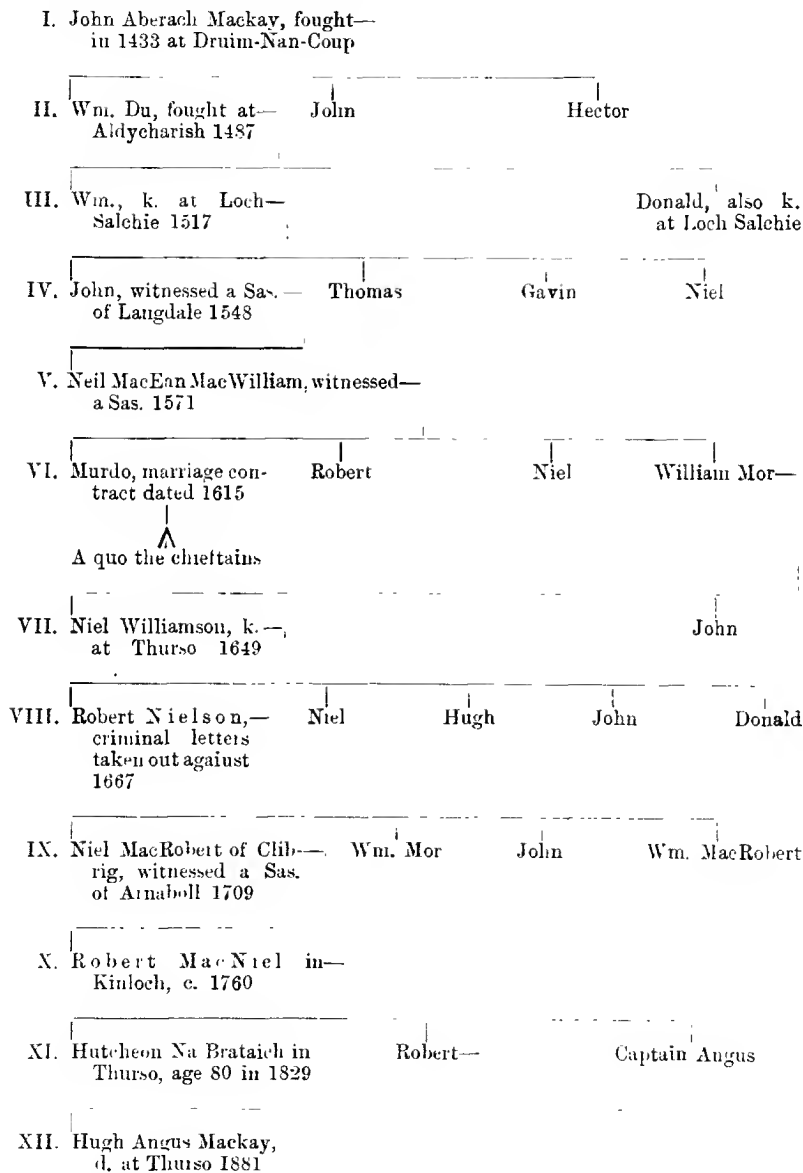
William Mackay was born in Strathnaver in 1797, joined the 78th or Ross-shire Highlanders in 1823, and after an army service of twenty-two years, settled at Dalcharn in 1845, where he died in 1893. Donald Mackay, father of the said William, married as his first wife Ann Mackay, sister of *Hutcheon na Brataich*, but William was a child of Donald's second marriage. As William the pensioner was a near neighbour of ours, we knew him intimately: and he often used to tell us that for two years before he joined the army he resided at Whitefield, near Thurso, with his kinsman, commissary Donald Macleod, a first cousin of *Hutcheon na Brataich*. During these years, between 1821 and 1823, *Hutcheon na Brataich* was a welcome and honoured visitor at Whitefield, and William, as he told us, saw the banner at different times. In 1842

¹ For further particulars of this struggle see our Genealogical Account of the Aberach-Mackays in *The Book of Mackay*.

William returned home on furlough, called at Thurso by the way, and was again shown the banner by Hugh Angus Mackay, nephew of *Hutcheon na Brataich*, in whose possession it then was. When in 1881 Hugh Angus, the said nephew, died at Thurso unmarried, William the pensioner was very anxious to secure the banner and solicited our help to this end, but it passed shortly afterwards into the possession of Alexander Mackay, assessor for the county of Caithness. The assessor died at Thurso, 15th January 1895, leaving no issue, and towards the close of 1897 the administrators of his estate handed the banner over into the custody of the Clan Mackay Society, who in turn deposited it for preservation in the Edinburgh Antiquarian Museum, where it now rests.

The Rev. Wm. Mackenzie, writing in 1792 from information gathered no doubt when he laboured at Achness between 1766 and 1769, gave his testimony as already quoted. We are thus warranted in concluding that the banner was treasured by the Aberachs about the middle of the eighteenth century as the genuine flag of John Aberach, and dating back to the first half of the fifteenth century. In 1829 the historian of the *House and Clan of Mackay* states that this banner was then in the possession of *Hutcheon na Brataich* at Thurso, and in more recent times the testimony of William the pensioner links us back to that of the historian. Among other traditions William the pensioner told us that this banner was carried, and nearly lost, by the Aberachs in a fierce encounter which they had on Strathnaver with the *Sliochd Ean Ruaidh*, another family of the Clan Mackay. This we take to be the battle above Syre, to which Sir Robert Gordon refers in his *Earldom of Sutherland*: and as it was in revenge of the slaughter of William Beg Mackay, killed at Durness about 1579, it must have happened in that or in the following year. If this tradition be genuine, it carries us back to the chieftain Neil Mac-Ean Mac-William, grandfather of Neil who was killed at Thurso, and great-great-grandson of John Aberach. We shall now give a key pedigree of the possessors of the Aberach-Mackay banner from the progenitor of the family downwards.

KEY PEDIGREE OF THE POSSESSORS OF THE ABERACH BANNER.



The banner is of white silk—hence the name *Bratach Bhan* (white banner) by which it is sometimes known—and is in a tattered condition. It is very evidently a fragment of its former self. Its length is only about 36 inches, and its breadth about 20 inches—a size far too small for a battle flag. It will be observed that the shield and crest are not now correctly related to the hoist, or leather strip, sewn along what is shown as the top of the flag in the reproduction from a photograph given in fig. 1. As related to the hoist, the shield now lies unnaturally on its side instead of facing it, and the lion rampant which it carries is made to appear as a lion passant. Evidently the leather hoist had become detached when the flag got tattered, and was then by misadventure sewn to the wrong side. If we imagine the hoist attached to what is shown as the left side of the flag in fig. 1, the shield and crest will appear correctly placed; the flag will be 36 inches broad, or, allowing for frayed margins, perhaps 38 inches; while its length may have extended to 60 or 70 inches. Sir J. Balfour Paul, Lyon King of Arms, in a letter dated 14th March 1899, writes:—

“If it is a banner, the principal armorial charge on it is represented in an unusual manner, as it does not face the hoist of the flag, which is the usual practice, but the bottom of it.”

We think we have explained how it came to present this unusual, and unnatural, appearance. He proceeds:—

“The charge referred to is evidently intended for a lion rampant; round the lion, at some distance from it and following the shape of a shield, have been at one time two thin lines representing, in my opinion, the outer and inner members of a double tressure. On the top horizontal line of this tressure, and projecting outwards from it, are five ornamental floreated objects, the centre one of which has a corresponding projection on the inner side of the tressure; in the middle of the vertical line down each side at the bends where the base begins to converge to a peak, and at the peak itself, there are similar objects all projecting both on the outer and inner sides of the tressure. What these objects are intended to represent is difficult to decide definitely: some of them might possibly be classed as thistles, some as fleur-de-lys, but none of them possess such characteristics as would enable one to put them down distinctly as one or the other. . . . The whole flag is evidently the work of some one unacquainted with the principles of heraldic design.”

The design is rudely executed, as may be seen by an examination of fig. 1, and the Lyon King is guarded in expressing his opinion, as becomes one occupying his high office, but we venture to think that what he states so guardedly is an undoubted fact. The shield is traced out by the two lines of the double tressure, surrounded by thistles and fleur-

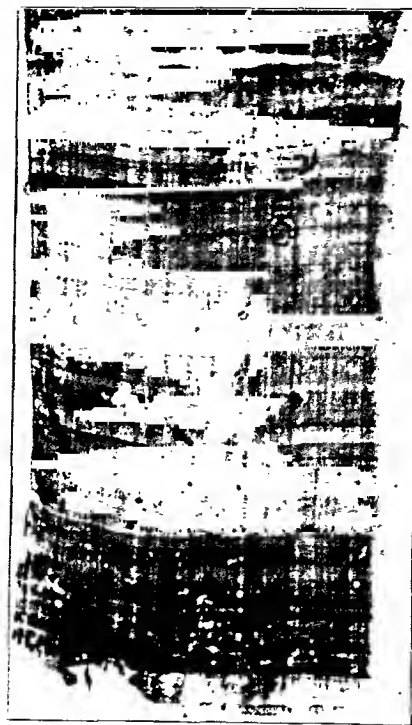


Fig. 1. The Aberach Mackay Banner. (From a photograph.)

de-lys, and carries the lion rampant. The heraldic significance of the double tressure and fleur-de-lys is royal descent. This is shown by the following extract of grant¹ by King George I. to the Earl of Sutherland, dated 14th July 1718:—

¹ Vide *Sutherland Book*, vol. iii. p. 220.

"George R. Whereas it has been humbly represented to us that our right trusty and well-beloved cousin John, Earl of Sutherland, is lineally descended from William, Earl of Sutherland, and Lady Margaret Bruce, second daughter to Robert the First, King of Scotland . . . therefore . . . and in consideration of the nobleness of his blood, as being descended not only from the ancient thanes and Earls of Sutherland, but from the royal family of Scotland, as is aforesaid, we hereby authorise and order our Lyon King at Arms . . . to add to the paternal coat of arms of the said John, Earl of Sutherland, the double tressure circonfleurdelize."

It is now well known that the only son of the marriage between William, Earl of Sutherland, and Lady Margaret Bruce, died unmarried, and that the family of Sutherland is descended of the second wife, Joanna Menteith. But into this matter we need not go further. We have shown in our genealogical account of the Aberach-Mackays that John Aberach was a son of Angus Du Mackay by his second wife, a daughter of Alexander Macdonald of Keppoch, and a great-granddaughter of King Robert II. It was probably because of this royal descent that John Aberach put such a charge upon his banner. The sons of Angus Du Mackay, although natives of the then rude north of Scotland, were not wholly unacquainted with the heraldry of that period. Niel, the eldest son of Angus Du Mackay by his first marriage, was for ten years in the south a hostage of the king, and spent some of that time on the Bass Rock, while John Aberach is said to have been fostered in Lochaber, and may have sojourned at the semi-royal court of his kinsman the Lord of the Isles. However rudely the designs on the banner may be executed, the son of Angus Du had some knowledge of heraldry, and gave expression to what he thought he was entitled to on this flag.

Let the reader look again at the flag as represented in fig. 1, and it will be seen that there is a crest above the shield. The execution is crude, but the representation is meant for "a hand erased" with the fingers extended. Round the hand runs the legend, "Verkvisly and tent to ye end." Across the palm of the hand are the Gaelic words, *Be tren* (Be valiant), as the Rev. William Mackenzie recorded about 1792 in his account of the parish of Tongue. John Mackay of Herri-

dale, author of *An Old Scots Brigade*, etc., states in the *Celtic Monthly* of June 1893 that Hugh Angus Mackay, the last Aberach hereditary bannerman, told him that his father always understood and read the words on the palm of the hand as *Bidh treun* (Be valiant). Of course Mr Mackay wrote these words adopting the modern Gaelic spelling. The final letter *n* of *tren* is not well-formed, and this has led some modern students to read it *treu* (true), but it was intended for *tren* (valiant), and so understood by the Aberach-Mackays.

As is well known among Strathnaver people, *Be tren* (be valiant) is the slogan of Mackay, which became Latinised into *manu forti*, the motto of Mackay since the family was dignified. Indeed, it seems to us that the old Gaelic motto is neater and pithier than the modern Latin one. The *manu* with a hand seems to us superfluous, while the word *forti* adequately expresses the idea of "be valiant."

As this was not the banner of the principal family of Mackay, now represented by the Lords of Reay, but of the Aberach-Mackays who were the oldest cadet line of that family, we naturally expect to find some difference between the arms of the principal family and that of the cadet. The armorial bearings of Donald, first Lord Reay, were as follows:—

Arms.—Azure on a chevron, or, between three bear's heads, couped, argent, muzzled, gules, a roebuck's head, erased, between two hands holding daggers, all proper.

Crest.—A right hand holding up a dagger, pailways, proper.

Motto.—Manu forti.

Supporters.—Two men in military habits with muskets, in a sentinel posture, proper.

Before this family was dignified in the person of Donald, first Lord Reay, who was created Lord Rae 20th June 1628, the arms were "argent over three mullets, azure, a hand naked, proper." Sir J. Balfour Paul, Lyon King, in a letter dated 6th November 1899, writes:—

"I am much obliged by the Rev. A. Mackay pointing out the entry in Sir James Balfour of the arms of 'Mackay of Strathnaver 1503,' as consisting of 'argent over three mullets azure, a hand naked proper.' This is given im-

mediately before 'Mackay of Strathnaver now Lord Reay,' who is assigned the present arms of the Baron. The presumption is that they altered their arms on the creation of the Peerage, and this view is rather supported by Nisbet, who, in giving the arms, says that 'since that family was dignified' their achievement was, etc."

That is to say, according to the Balfour MS., the crest of Mackay of Strathnaver in 1503 was "a hand naked" without a dagger, just as is represented on the banner. But such a charge is also found on at least two Mackay tombstones known to us. Fig. 2 is a representation of the

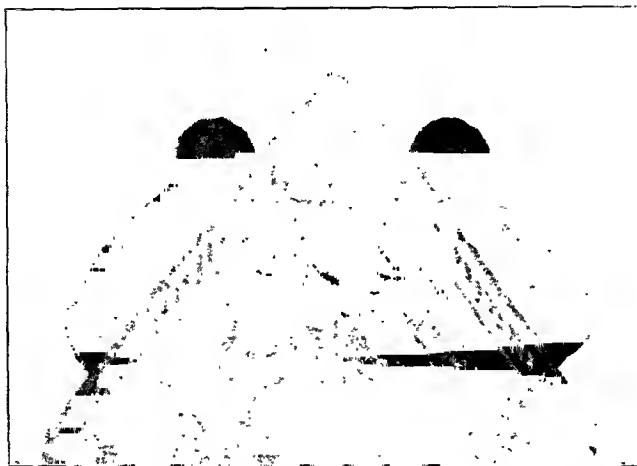


Fig. 2. Stone with armorial bearings at Kirkton, Strathhalladale.

Kirkton (Strathhalladale) stone. It bears the initials, A. M. K., of Angus Mackay, second of Bighouse; and the date 1630 indicates that it was erected over the tomb of his first wife, Jane Elphingstone, niece of Lord Elphingstone, who died in that year. The stone was found in 1894 among the ruins of Kirkton Chapel, and is now fixed on the pillar of the cemetery gate. The shield is peculiarly divided into two halves by a horizontal line. Above the horizontal line, and in the dexter division, there is a roebuck's head pierced by an arrow, exactly similar to the emblem to be seen on the Tongue stone (fig. 4). In the sinister

division there are three bear's heads. Below the horizontal bar there is a "hand," with fingers extended, resembling the crest on the banner, and flanked by what appears to be two blades. These flanking daggers may indicate the transition from a "naked hand" to a "hand holding a dagger," for it was shortly before this that Donald Mackay was created Lord Reay.

Within the ruins of the old church of Durness there is a stone over the tomb of Donald MacMurdo MacIan Mor, of which a representation is given in fig. 3. The said Donald was a grandson of Ian Mor—the

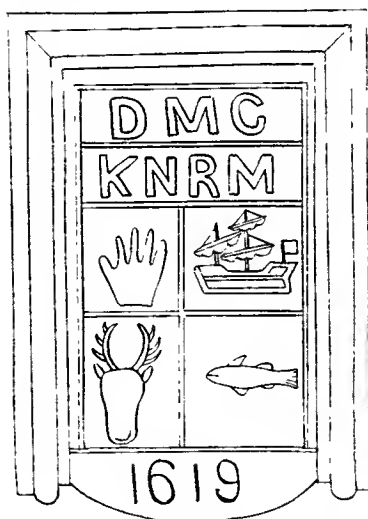


Fig. 3. Tombstone at the old Church of Durness.

illegitimate son of John Mackay of Strathnaver, who signed a bond of friendship with the Earl of Sutherland in 1518—and not a Macleod, as is erroneously stated in the *House and Clan of Mackay*. There was a family of Macleods in Assynt called *Sliochd Ian Mhor*, but this was "Donald MacMurdo MacIan Mor, chieftain of the Slaight Ean Woir in Strathnaver," according to Sir Robert Gordon.¹ Now Sir Robert, for

¹ Vide *Earldom of Sutherland*, p. 254.

reasons of his own, would never allow that Durness and Edderachilis formed part of the country of Strathnaver—he was wrong in this, but we need not discuss that matter here—so that the *Slioch Ean Woir*, of which Donald was chieftain, could not possibly be the Assynt Macleods, as this tribe is said to have been a Strathnaver one. Besides, the account which Sir Robert gives of Donald MacMurdo MacIan Mor and his adherents clearly indicates that he was a Mackay. Angus Mac-Kenneth Mac-Alister, who was slain at Hope about 1605, was a dependent of the said Donald,¹ and laid claim to some lands on Strathfleet. As John Mackay of Strathnaver, the father of Ian Mor, got a grant of these Strathfleet lands from the Earl of Sutherland in 1518,² and had as a dependent Alister the grandfather of Angus Mac-Kenneth Mac-Alister, we are justified in concluding that the latter Alister, who clung to these lands, still depended on a descendant of the house from which his ancestors got their claim to them. Ian Mor, the son of John Mackay of Strathnaver, had at least five sons, viz., “Neil M’Ane Moir, Rory M’Ane Moir, Murdoch M’Ane Moir, John M’Ane Moir, and Tormat M’Ane Moir.” It was Rory, the second son mentioned in the above extract,³ who held Borge Castle on the coast of Farr for Iye Du Mackay of Strathnaver during its siege in 1554. Murdoch M’Ane Moir, the third mentioned, was the father of Donald MacMurdo MacEan Mor, who is buried at Durness. The shield over Donald’s tomb,⁴ as shown in fig. 3, bore, along with other charges, “a hand” with extended fingers and a stag’s head. There are no daggers associated with the “hand” here, because in 1619 we have not yet reached what we have already called the transition period. In 1619 it was simply “a hand” just as on the banner: in 1630 the hand is flanked by two daggers: and after that

¹ Vide *Earldom of Sutherland*, pp. 253.

² Vide *Reay Papers*.

³ Vide Pitcairn’s *Criminal Trials*, vol. i. p. 352.

⁴ The stone which covers his grave bears the following inscription, said to have been composed by Donald, first Lord Reay, in a frolicsome moment:

“Donald Mac-Murchon heir Iyis lo:
Vas il to his freind, var to his lo:
True to his maister in veird and vo.”

period, as the tombstones of the Mackay country prove, the hand holds a dagger.

The crested hand on the flag is clearly Mackay, and so also is the motto, *Be treun*, which always was the slogan of the clan. Indeed, the peculiar use of the word *treun* by Strathnaver people in daily conversation strikes one from other parts of the Highlands at once. Everything superlative they describe as *treun*. A fine day is *la treun*, a good horse *each treun*, and so on the whole round of the gamut. We are strongly inclined to believe that the frequent use of this vocable may be ascribed to the place which it found in their war-cry. Of the legend round the crested hand we can give no explanation.



Fig. 4. Stone built into the wall of Tongue House.

The charge on the shield, a lion rampant surrounded by the double tressure and fleur-de-lys, is altogether different from that of the principal family of Mackay. In crest and motto they practically agree, in shield they are far apart. On the Tongue stone, however, which is represented by fig. 4, the shield is supported by two lions surmounted by pendant thistles. This stone is built into the wall of Tongue House, and bears the initials, D. M. R., of Donald Master of Reay, who built the house in 1678 after it had been completely destroyed by fire. The said Donald, Master of Reay, who did not survive his father's death,

was fostered among the Aberachs, and probably out of compliment to this family adopted as the supporters of his shield the lions, surmounted by thistles, which are found on the Aberach flag. We cannot imagine any other reason for diverging from the "armed men" which his grandfather, father, and successors used.

As the Aberach chieftains never recorded arms at Herald's Office nor put them on tombstones, as far as known to us, the flag alone tells what they took the liberty of using. But this we may say, they have a better title to carry "the double tressure circoufleurdelize" than the house of Sutherland, notwithstanding the grant of King George I., already referred to.

The tinctures which characterise the armorial bearings of the Lords of Reay are azure, or, and argent, or in other words blue, gold, and white : and these are the colours in which the design on the Aberach banner is worked. The flag or *Bratach Bhan* is white. The body of the design is in blue thread, the outwards are in gold now considerably faded. The lion and outer portion of the floreated objects round the double tressure are strongly blue, so are the bars on the wrist and the loof and the letters, but the extended fingers are in gold. There are no red threads in the design, so far as we can judge, although there is a little red in the bearings of the Reay family. With this exception the Aberach tinctures are exactly those of the principal family of Mackay. Though the banner is of little value from an artistic point of view, it claims to be one of the oldest clan banners now existent in Scotland, and we are glad that it is safely preserved in the Edinburgh Antiquarian Museum.

V.

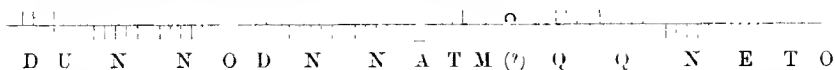
NOTICES OF A SCULPTURED STONE WITH OGHAM INSCRIPTION, FROM LATHERON, PRESENTED TO THE NATIONAL MUSEUM BY SIR FRANCIS TRESS BARRY, BART., M.P., HON. F.S.A. SCOT., KEISS CASTLE, CAITHNESS: AND OF TWO SCULPTURED STONES, RECENTLY DISCOVERED BY REV. D. MACRAE, B.D., AT EDDERTON, ROSS-SHIRE. BY JOSEPH ANDERSON, LL.D., ASSISTANT-SECRETARY AND KEEPER OF THE MUSEUM.

The Latheron Stone.—This stone was found last year in the wall of an old byre in Latheron, and brought to Sir Francis Tress Barry at Keiss Castle, where I saw it in August last. I had previously received photographs and squeezes of the stone, and I had ample opportunity, during my stay there, of studying the stone itself and endeavouring to determine the more obscure portions of the inscription.

The stone (fig. 1) is a rectangular slab from the greyish beds of the Caithness sandstone, measuring 3 feet in extreme height by 17 inches in breadth and about 4 inches in thickness. The top and bottom are broken away, the fracture at the top passing obliquely across the stone, while that at the bottom is more nearly straight across. The stone appears to have had a marginal moulding along both sides, but that on the right hand side has been chipped away. The Ogham inscription runs the whole length of the stone on the left hand side, the stem line being drawn in a rude way parallel to the sunk line of the marginal moulding, and about an inch and a half inside of it. The whole face of the stone between the inscription and the right hand side is occupied with sculpture, partly in relief and partly incised.

The inscription is probably incomplete at both ends, owing to the breaking away of the stone at the top and bottom. What remains of it extends to 2 feet 8 inches in length and shows eighteen complete

characters, and possibly part of a nineteenth. Read from the bottom to the top in the usual way they appear to be—



A single digit remaining of the nineteenth letter shows that it had been on the upper side of the stem-line. The characteristics of the inscription are chiefly normal, and northern. The A with the cross bar at the lower end occurs on the Lunnasting stone, Shetland, on that from the Broch of Burrian, North Ronaldsay, Orkney, on the sculptured slab at Golspie, and on the sculptured slab from Formaston, Aboyne, Aberdeenshire. The letter after the M, which assumes the form of a semi-circle, appears in some lights to have a tail sloping to the right, but this seems to me to be an accidental score or flaw in the stone. A semicircular letter on the Lunnasting stone has been read as O, and on the Formaston stone a letter which is a full circle bisected by the stem-line has been read as OI. The usual formula seems to demand that some equivalent of the key-word MAQI should come here, and

DUNNODNNAT MAQQ NETO

Dunodnat son of Neto is obviously suggested, supposing that the inscription really begins at the break at the bottom.

This ogham is the second found in Caithness, and the seventeenth now known in Scotland. Of these, five are from Shetland, one from Orkney, two from Caithness, one from Sutherland, one from Nairnshire, four from Aberdeenshire, one from Kincardineshire, one from Fifeshire, and one from the island of Gigha, Argyleshire.

With regard to the sculpturings on the face of the stone, the double rectangular figure in relief on the upper part, with its prolongation of a narrower rectangle below, is not quite like any other form of the rectangular symbol, variable as it is. The upper and wider rectangle is filled with double spiral ornament arranged in C-shaped scrolls placed back to back. The lower and narrower rectangle is filled with an interlaced pattern.



Fig. 1. Sculptured Slab with Ogham Inscription from Latheron, Caithness. (1.)

The figures below this are merely incised, the lines being, as usual, picked out by a pointed tool. The bird is the raptorial bird represented on the sculptured monuments at Nigg, Strathpeffer, Monymusk, Birnie, Inveravon, Fyvie and St Vigean's. It has the beak and the tail rendered in much the same manner as at Inveravon. The Fyvie bird is in better drawing, but has the same exaggerated spread of the upper part of the leg and the same rendering of the talons. At St Vigean's the bird is represented as having the fish in its talons and stooping as if in the act of fixing its beak in the head of the fish. The bird occurs altogether eleven times on the monuments, ranging from Forfarshire to Caithness.

The fish here is of the usual form, the median line, the gill-cover, the eye, and the line of the mouth boldly rendered, and showing one dorsal and one caudal fin above, and a pectoral, ventral and caudal fin below, while the tail is rather exaggerated. The lower part of the outline of a fish, showing the three fins, is visible on the stone with an ogham inscription, which was found on the south side of Keiss Bay in 1896, and presented to the National Museum by Sir Francis Barry. A fish also occurs on the Ulbster sculptured slab, now at Thurso Castle. It occurs on the sculptured slab with an ogham inscription at Golspie, and in a slightly varied form on a small slab with incised symbols at Dunrobin, and on the pillar-stone called the *Clach Bhiorach* at Edderton. It occurs altogether fourteen times on the monuments, ranging from Perth to Caithness.

The group of the bird and the fish, representing the fish as the prey of the bird, however, only occurs twice on the monuments, viz., in this instance, and on the inscribed stone at St Vigean's in Forfarshire. In both cases there can be no doubt that the bird is meant for the eagle. The group occurs also in the illuminated manuscripts of the early Celtic church—as in the Book of Armagh, written in the first half of the ninth century, where there is a page giving the symbols of the four evangelists, the symbol of St John being an eagle with a fish in its talons; and in the codex known as the *Grammatica Prisciani*,

which was added to the library of St Gall in the middle of the ninth century. It occurs also in ecclesiastical sculpture on the doorways of early churches.

Below this group, at the bottom of the stone and partly broken away, is a group of two horsemen, which recalls the similar group of horsemen at the base of the cross-stone at Edderton, Ross-shire. This part of the stone has suffered some defacement, and the lines of the figures are difficult to make out, but the foremost rider seems to hold a spear over his shoulder, and the neck and head of the horse of the second rider are fairly visible.

The Edderton Stones.—I first heard of the discovery of these stones in August last, from Rev. Dr Joass, and I have to thank the Rev. D. Macrae, B.D., the minister of Edderton, their discoverer, for the trouble he has taken in supplying me with the photographs, rubbings, measurements, and descriptive notes from which this paper is compiled.

The two stones were found in a part of the churchyard that has not been used for many years, about twelve paces southwards from the erect cross-stone with the three horsemen at its base. They were lying in line, at a depth of from 3 to 4 inches under the turf. They are both of the dark chocolate-coloured red sandstone of the district, but are evidently parts of two different monuments, as the margins do not correspond.

Stone No. 1 is a slab 39 inches in length by $22\frac{1}{2}$ inches in breadth and 3 inches in thickness, rather rudely sculptured in low relief (as shown in fig. 2), with an equal-armed cross of Celtic form, and figures of animals above, below, and in the spaces of the background between the arms of the cross. These spaces are slightly sunk, and the parts between the outlines of the cross and the other figures are picked out by a pointed tool. The cross has a circle of the width of the arms in the centre, and has the usual semicircular hollows at the intersections. The central circle has a marginal moulding, and the interior has been filled with ornamentation now so much decayed as to be quite indeterminable,

though it is suggestive of diverging spirals. The arms of the cross have also been filled with ornament which is now indistinguishable, but gives a suggestion of interlaced work. Below the cross is the figure of a bird of the usual raptorial form, with a hooked beak, like that on the stone from Latheron and other places, as described above. The lower part of the bird's figure is broken away by the fracture of the lower part of the



Fig. 2. Edderton Stone (No. 1.)

stone. If there were any plumage lines on the body of the bird, as there generally are in other cases, they have all disappeared, but the eye remains visible. In the spaces to right and left of the lower arm of the cross are two hounds at speed facing towards each other, and placed obliquely in the angles of the cross. A pair of beasts are similarly placed in the angles of the cross on the Ulbster stone. In each of the spaces above the horizontal arms of the cross is a four-footed

animal placed with its feet towards the side of the stone, the line of its back parallel with the side of the upper arm of the cross. Over the upper arm of the cross is a beast, apparently of the same character, and placed in the same way with its feet towards the upper margin of the stone and its back parallel with the upper line of the cross. These animal figures are so crude and so much decayed, that it is impossible



Fig. 3. Eddleston Stone (No. 2.)

to say more about them than that they do not in the least resemble any of the sculptures on the Ross-shire stones, or indeed on any of the stones in the northern districts. But they have a strong suggestion, both in form and character, of the nondescript beasts on the fragment of a cross-shaft from Borthwick, Midlothian.¹

The stone appears to be the complete upper part of the slab, having on three of its sides a marginal monbling, that on the top being much

¹ *Proceedings*, vol. xxiii. p. 350 : *Early Christian Monuments of Scotland*, part iii. p. 422.

broadier than the others ; the part broken away at the bottom in all probability did not extend much further.

Stone No. 2 (shown in fig. 3) is part of a sculptured slab of red sandstone, 33 inches in length by 23 inches in breadth and about 3 inches thick. It has a marginal moulding on two sides, the other two being broken away. The greater part of the surface has scaled off, and is crossed by cracks, so that the sculpture is mostly obliterated. What remains shows two scrolls of foliaceous ornament, from which a trefoil proceeds, and a suggestion of a small dragonesque creature, such as is often placed in the scrolls of foliage, as in the borders of the stones from Hilton of Cadboll and from Tarbat in Ross-shire.

VI.

NOTICE OF THE DISCOVERY OF THE REMAINS OF AN EARTH-HOUSE
AT BARNHILL, PERTH. BY ALEXANDER HUTCHESON, F.S.A. Scot.,
BROUGHY FERRY.

In the month of April last, in the course of the construction of a new road at Barnhill, near Perth, the property of Sir Alexander Moncrieff of Culfargie, K.C.B., some lines of stonework suggestive of a structural formation were uncovered.

The discovery was communicated to Sir Alexander Moncrieff, who immediately stopped the works and made intimation of the discovery to the Society. I was honoured by the Council with a request that I should visit the site and report to the Society.

Despite of certain peculiarities of construction, which, however, are, I think, susceptible of explanation, I had no difficulty in recognising the remains as those of one of the underground structures known as weems or earth-houses, and peculiar to a certain area of Scotland.

I have prepared a plan showing the form and dimensions of the remains, but a few other dimensions and particulars not shown, or only

adverted to, on the plan are desirable. The structure has now unfortunately been removed, the proper completion of the new roadway not having permitted of its retention.

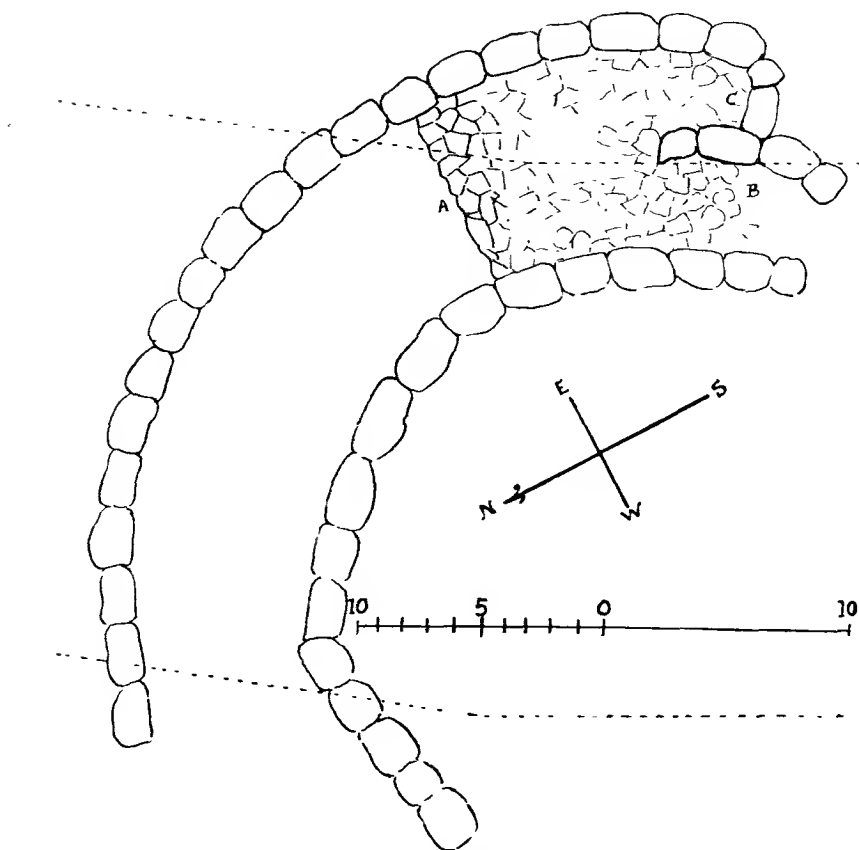


Fig. 1. Ground Plan of Earth-house at Barnhill, Perth.

The entrance to the earth-house, which was only 2 feet 3 inches in width, faced towards the south-west. The wall forming the left-hand side of the entrance was continued inward to form the western

wall of the earth-house, but the right-hand side of the entrance was prolonged inwards only 6 feet 4 inches, and then formed a projection, behind which was a recess 3 feet in depth and about 4 feet in width. The entrance passage, this recess, and a portion of the structure extending backward 8 feet from the inner end of the passage were rudely paved with stones. From this point the earth-house exemplified the usual characteristics of its class by sloping downwards and curving rapidly to



Fig. 2. View of Earth-house from lower end. (From a photograph by Mr A. M. Rodger.)

the left for a distance in all of about 45 feet from the entrance, measured along the medial line, to where the two side walls abruptly terminate, having doubtless been cut off when the public road between Perth and Dundee was diverted and cut through it, presumably in the early years of last century.

And now as to the features of the situation. It is well known that these structures have been commonly found occupying level or at least

arable ground, in other words, sites suitable for, and in modern times given over to, agriculture : hence they have been generally discovered by the plough coming into contact with the roofing slabs, and so leading to an examination of the obstruction. But the Barnhill earth-house has differed from the usual type in occupying the summit of a rocky knoll, where presumably, if covered or roofed over in the usual way with large slabs of stone, it must have been partially formed above ground, and afterwards covered from sight by earth being heaped above it to such depth as afforded that concealment which seems to have been the invariable rule, if not indeed the originating cause, of the typical form of these structures. No covering slabs now exist, nor has any evidence of them here been discovered. The walls were dry-built, and formed of a single line, or rather of superincumbent lines, of stones.

The stones of the first or lowermost line average 2 feet 6 inches long, 2 feet high, and 1 foot 6 inches thick. They are water-rolled and ice-scratched boulders of whin, diorite, granite, etc., nowhere exhibiting tool-marks or any evidences of artificial shaping. The stones had, however, been placed with some recognition of a principle of construction. They were set with their longer axes in the line of the wall, and had their smoothest and flattest surfaces facing inward to the earth-house, but nothing of the nature of what is known among masons as 'bonding' was visible. At the date of my visit practically only one tier of stones remained, with here and there portions of a second tier ; but I learned from the workmen that before the artificial character of the remains was recognised, one and in some places two tiers of stones had been removed from the walls. The result of this removal has been to deprive us of the possibility of now deciding whether the walls in their complete state were erected with that inward convergence of the upper part which characterises these structures, but a consideration of the available evidence does not support such an assumption.

I am therefore inclined to believe that the walls were originally erected

practically perpendicular, and banked up behind by the stiff subsoil to give stability to this otherwise weak wall.¹

It was a singular place to select for an earth-house. The rock, which protruded through the surface at the apex of the knoll, must have shown the prospective builders what they had to expect in forming there an underground structure. Are we therefore to assume that they contemplated a certain amount of scarping of the rock² to attain their ends? I was at first inclined to think so, from certain appearances of the rock, which forms everywhere the floor, shelving downwards at the entrance, and also on the left side about half way towards the end; but on reflection I gave this up, since, even if necessary to scarp the rock at the entrance and further in, it was not necessary to make this supposed scarping extend underneath the stones forming the side walls, which, on examination, it was found to do. I therefore concluded that the supposed scarping was only the natural slope of the rock: and in this opinion I was glad to have the concurrence of Mr Alex. M. Rodger, Curator of the Museum of Natural History, Perth, who is well acquainted with the geology of the district. It seems, therefore, that this structure, which conforms to so many of the features of an earth-house that it seems impossible to assign it to any other known class of early structure, yet differed from the type in having been only partially excavated, and consequently formed partly above ground, being afterwards covered over with soil so as to be hidden from view, as all others wholly excavated were.

I have said that the rock is everywhere the floor of the structure. This is true even where the floor has been paved, as I found by lifting a portion of the pavement, which is composed of flattish cobbles, each of them from 9 inches to a foot across. They exhibit no signs of dress-

¹ One at Kinord, Aberdeenshire, has its walls constructed of single boulders set on edge or on end. *Scotland in Pagan Times*,—The Iron Age, pp. 291-2.

² In an underground structure of this type, but probably of later construction, discovered at West Grange of Conan, Arbroath, the walls are partially cut out of the rock, which also for a considerable portion of its length forms the floor of the chamber. *Ibid.*, pp. 294-5.

ing, but have been laid with their smoothest or flattest sides uppermost, and close on the rock. Their presence here was doubtless to furnish a better and smoother floor at the entrance than the rugged surface of the rock itself would afford.

From the entrance the floor sloped pretty equally downwards until it attained a depth of 4 feet 6 inches at a point opposite to the end of the



Fig. 3. View of Earth-house, showing pavement and recess on right of entrance. (From a photograph by Mr A. M. Rodger.)

west wall. Here the rocky floor began to slope upward again, and had risen about a foot when the end of the eastern wall was reached. Beyond this point, as already explained, a portion of the knoll together with the earth-house had been cut away in the alteration of the public road between Dundee and Perth, so that, unless some record has been elsewhere preserved of the discoveries of that period, it may be impos-

sible now to determine how much further or in what direction the structure may have extended.

It was unfortunate that before my visit the interior was cleared out down to the rock, and the material spread out on the surface of the new road. I was informed the men were careful to keep a good lookout for relics, and some bones and a broken nodule of black flint were picked up and preserved, but a practised eye might have detected other articles. I cleaned out carefully the joints and cavities of the rocky floor and between the paving stones, but beyond a thin skelb of black flint, about an inch square and dressed on one edge, and a few pieces of charred wood, nothing of interest was detected. The flint may have travelled from the surface, but was found between two of the cobblestones in the recess at the entrance.

My thanks are due to Sir Alexander Moncrieff for so obligingly supplying workmen to clear the floor and make other excavations in aid of these investigations. I am also indebted to Mr James T. Sellar, of the firm of Messrs R. H. Moncrieff & Co., W.S., Perth, Sir Alexander Moncrieff's agents, for accompanying me to the site, and affording me much valuable assistance at my first and subsequent visits when the secondary excavations were being made.

VII.

NOTES ON PRIMITIVE STONE STRUCTURES OF THE BEEHIVE TYPE,
DISCOVERED BY R. C. HALDANE, ESQ., IN THE NORTH OF SHET-
LAND. BY ROBERT MUNRO, M.D., LL.D., AND THE HON. JOHN ABER-
CROMBY. SECRETARY.

Owing to some correspondence between R. C. Haldane, Esq., Lochend, and myself, with regard to primitive stone dwellings on his property, to which he directed my attention, I was induced to visit the locality in the first week of July 1902. My considerate host made arrangements to conduct some excavations during my stay, and fortunately we had two exceptionally fine days to carry out his project. I now propose to give a short account of the results of these investigations, premising that my reason for so long delaying to do so was the hope of finding leisure to treat the subject more exhaustively by instituting a comparison between these Shetland structures and analogous remains elsewhere.

In consequence of the interesting discovery made by the Hon. John Abercromby in the course of his recent excavations in Aberdeenshire, viz., that certain walled enclosures in the vicinity of the Loch of Kin-nord, long regarded as the ruins of an early British town, were associated with underground dwellings, it is desirable to put Mr Haldane's discovery at once on record, so as to be available for comparative purposes should the incomplected investigations in Aberdeenshire be further prosecuted.

On the morning of 2nd July 1902, Mr Haldane, his son Mr Oswald Haldane, B.A., Cambridge, myself, and a couple of sturdy Shetlanders armed with digging tools, started for a place which bore the significant name of the "Giant's Garden." Leaving Lochend House by the road which leads almost due north to the fishing village of North Roe, we soon passed, on the left, a small fresh-water loch, merely separated from the sea by a high bank of sea-shore gravel, which stretches across the entire breadth of the little bay without any break except a small open-

ing at the west end, through which the surplus water finds an exit. This is one of several similar instances of the natural formation of lake basins which attracted my attention on the Mainland of Shetland. These gravel barriers are so well defined and limited in breadth, and have such a modern appearance, that one instinctively forms the idea that there must have been some specific natural phenomenon to account for the initiatory process in their formation. Perhaps geologists might look into the matter, and vouchsafe us an explanation of these comparatively recent topographical changes in this part of Scotland.

A little beyond the loch I was shown a very small hut, ensconced in the hollow of a burn, which contained one of those primitive Shetland mills formerly prevalent in Britain, and to which parallels may still be found in other parts of Europe, as, for example, in Scandinavia and in Bosnia. (See *Rambles and Studies in Bosnia*, etc., p. 33.)

Continuing our journey, we ascended, on the left, the steep slope of a high ridge which separates the valley and road to North Roe from the Roer Water, and, about half way up, came to a ruined beehive hut of small dimensions. Of its chronological horizon we had no date; but of its actual horizon, as seen across a wide semicircle of sea and land, extending from Colla Firth on the south to Burra Voe on the north, there was much to fascinate both the eye and the imagination. Directly below us was Housetter Loch, at the north end of which was a ruined cairn (Giant's Grave), with two conspicuous standing stones within a few yards of it.

We then crossed the ridge, and on the descending slope passed over a broad belt of angular stones, heaped together pell-mell in the most fantastic manner. Underneath some of the larger masses were roomy and well-sheltered cavities, which, Mr Haldane suggested, might have been utilised in former ages as human habitations. But as no evidential materials bearing on the point were available, *cahit questio*. After traversing this stony zone we came, just at its western margin, to the so-called "Giant's Garden," the goal of the day's journey.

The salient features of the situation were readily discernible under the guidance of Mr Haldane, who had already made himself conversant

with them by a few preliminary excavations. With the aid of the accompanying sketch plan (fig. 1) the main facts will be easily understood without having recourse to much descriptive detail.

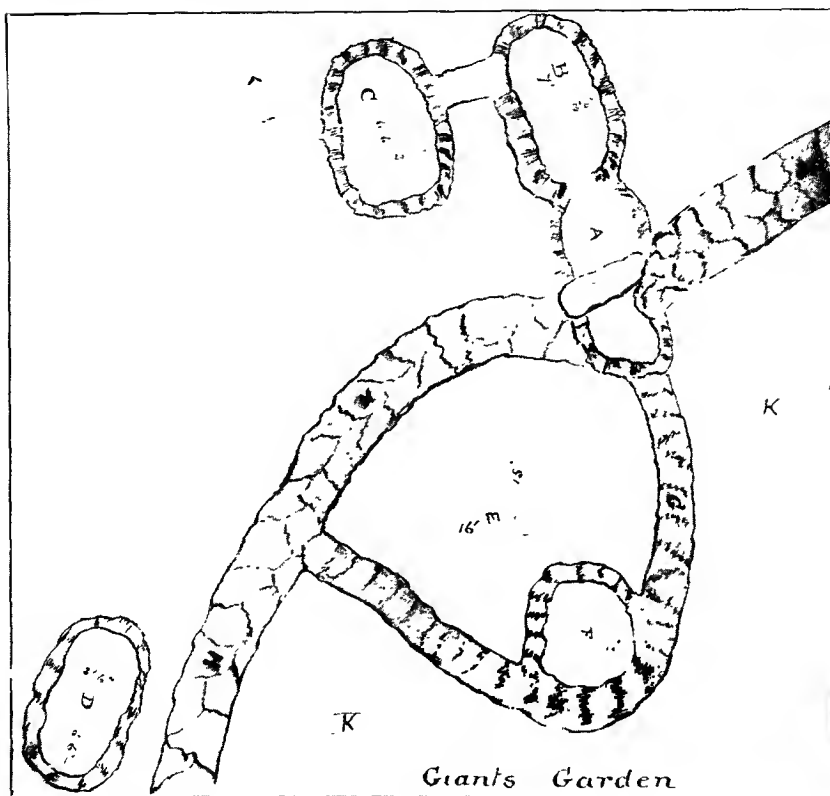


Fig. 1. Plan of structure called Giant's Garden.

(1) The first thing that caught the eye was an irregular circle of rough stones, which at some former period had evidently been an enclosing wall. The area thus circumscribed (K K) measured 30 paces by 29 paces, and lay in a slight hollow, with a considerable slope and sunny exposure to the south-east.

(2) On the north-west margin the ground stood on a higher level than the surface of the enclosed area, and here Mr Haldane recognised the ruins of four underground huts (A B C D). The first (A) communicated by a small passage with the second (B), from which access was got to the third (C) by a similar opening. The fourth hut (D) appeared to be isolated.

(3) Inside the enclosed area, and over the space adjoining the huts A, B, and C, there were the remains of a horseshoe-shaped wall, covering a space 15 by 16 feet, but so dilapidated as to give no indications of its purpose. Here, after removing away a heap of stones, we found traces of a passage into the first hut (A).

Mr Haldane had previously cleared out the *d/bris* from the huts B and C, but no relics of any kind were found in them. Of these huts B was the largest, measuring 7 feet in length, 3 feet 6 inches in width, and about 5 feet in depth. Their walls were built of dry stones of moderate size, none of them approaching Cyclopean dimensions, but the roofs had fallen in. Whether the latter were constructed with a vaulted roof on the beehive principle there was no direct evidence to show, but if slabs large enough to form transverse lintels had been used, none were found—a fact which, seeing that stones were not likely to have been removed for modern building purposes, suggests that the former was the method adopted. In 1898 C was covered with heather and the roof whole. Two boys, dancing on the top, caused the roof to fall in.

The chief archaeological value of Mr Haldane's discovery lies in the fact, which has been undoubtedly established, that here we have a group of underground small chambers associated with a circular enclosure of undressed stones above ground. Possibly the huts were the habitations of a pastoral family, while the adjacent enclosure served as a pen for their cattle.

II. *The Roer Structure.*

Next day the scene of our operations was on the north side of a small loch from which the Roer Burn issues, and about a mile to the west of

the "Giant's Garden." This loch lies 349 feet above sea-level, and the rising ground for a considerable distance northwards is carpeted with a dense covering of heather, luxuriantly growing on a thick bed of peat. Here and there a protruding stone or the top of a rock reminded one that the peat lay over a stony substratum. After a little rough walking through long heather we came to a halt, about a gun-shot from the north shore of the Roer Water, at a small oval mound, some 25 feet in length, and entirely covered with peat and heather. The top of the mound showed a marked depression, which to the tread sounded as if it were hollow, or at least less solid than the outer portion. Attention was first directed to this mound by the fact that a shepherd's dog had found its way for some distance into its interior by a hole formed between a couple of stones partially exposed on its eastern side (see plan, at D). Subsequently Mr Haldane made some tentative digging, which exposed the small guard-chamber G and a portion of the entrance-passage F.

Such was the condition and archaeological prospects of the mound when we began excavating it on the 3rd July 1902. The *modus operandi* was simple, but speedily effective. The peat was cut by the spade into rectangular masses and pulled away by sheer force—a process greatly facilitated by the long heather, which afforded a splendid grip to several hands at the same time. Moreover, the peat over the stones came away readily, while that in the centre had little bottom attachment, having apparently spread from the sides until it formed a thick uniform mass over the whole ruins, without at all penetrating into the recesses of the building. As the work progressed the structural arrangement of the underlying stones became gradually more defined, until finally the peculiar features of the building, as delineated on the accompanying sketch plan, were clearly ascertained. I regret to say that, owing to the amount of mud and stones (the latter no doubt being accounted for by the fallen roof) which lay over the central area, we were unable, for want of time, to clear away any portion of it down to the surface of the original floor. As the slope of the ground to the water's edge was fairly

steep, it seemed at first sight strange to find so much mud in the interior of the building. But, considering the altered conditions of its present physical environment, this feature may be accounted for by the fact that the structure had been originally built, and even had become a ruin, before the peat had taken complete possession of the locality. Without the obstruction of the peat, the site would have been practically quite dry. I am also inclined to think, but without being able to give any describable evidence in support of this opinion, that the abnormal growth of peat in this district is a comparatively recent phenomenon, and, for this reason, refrain from speculating on the antiquity of this curious structure, on the ground that, since it became a ruin, it has become submerged in growing peat to the extent of two or three feet. The Drunkelin wooden hut found in County Donegal, Ireland, which contained a stone axe, was buried in peat to the depth of 16 feet above its roof, which being 9 feet above a wooden flooring (*Lake Dwellings of Europe*, p. 392), made the total growth of peat since the hut was erected not less than 25 feet.

The subjoined plan of the Roer structure by the Hon. John Abercromby, who subsequently completed the investigation, though drawn to scale, only represents the inner contour of the enclosure, and the dimensions and position of a number of small covered recesses which entered from it into the substance of the surrounding wall, as the superincumbent moss and heather had not been removed from the entire area of the mound. The thickness of the enclosing wall varied considerably, but in one particular place I ascertained that it was from 4 to 5 feet. From the distal ends of the recesses it would, of course, be much less. The central space was irregularly circular, having a diameter of about $8\frac{1}{2}$ feet. As the dimensions of the recesses and other important structural details are carefully recorded in Mr Abercromby's supplementary notice of this structure, it is unnecessary to repeat them here.

The opinion which I formed at the time of my hurried investigation of the Roer structure was that it had been roofed on the beehive method, but, as will be seen in the sequel, both Mr Abercromby

and Mr Haldane are more inclined to think it had originally no roof, grounding their opinion on the fact that the stones were not in sufficient quantity to form such a roof. From the ruinous condition of the building it appeared to me that its demolition was the deliberate work of men's hands, as not only the roof of the central area (if it had one) but all the lintels over the recesses (except one which was considered to be *in situ* at the inner end of chamber G) had been removed. Some of the stones, especially the more selected specimens,

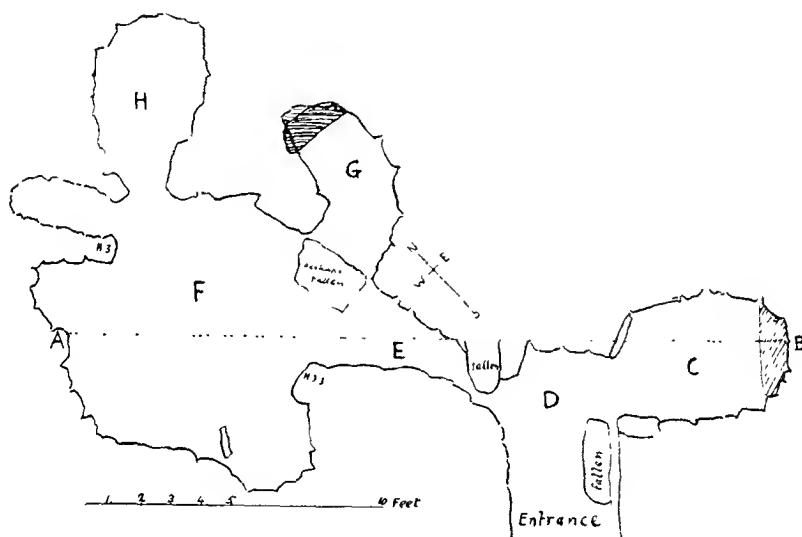


Fig. 2. Plan of the Roer Structure.

such as those which formed the roofing and lintels, might have been carried away after its demolition. Moreover, it is difficult to conceive what object one could have in making such an elaborate structure, with a guard-chamber and sleeping-berths, had the central area remained an open court like the interior of the brochs. On either supposition, there must have been more stones utilised in its original structure than are now visible on its ruined site.

NOTES ON THE ROER WATER STRUCTURE. BY MR ABERCROMBY.

On 6th June 1904 I made some further examination of this structure, most of which had been dug out by Dr Robert Munro last year. The total length along the base line A B (fig. 2), lying N.W. and S.E., is 22 feet 9 inches.

At the east end is a chamber C, 4 feet 10 inches long by 4 feet wide. To the left of this lies the entrance to the building, about 3 feet 9 inches wide. By means of an entrance, 1 foot 10 inches wide, chamber C communicates with an irregular chamber D, about 3 feet 2 inches long by 3 feet 7 inches wide, from which a passage E, 6 feet 4 inches long, 1 foot 3 inches wide at the near end, and 3 feet 3 inches at the far end, leads into a roughly-circular enclosure F, about 8 feet 7 inches by 8 feet 7 inches.

At the end of the passage, on the right-hand side, is curved recess G, 6 feet long by 2 feet 4 inches wide at the entrance, which terminates nearly in a point, and here is covered in for a length of 1 foot 3 inches by a flat lintel stone (fig. 3). In the right-hand wall, at 2 feet 6 inches from the corner, and half way up the wall, is a small rectangular recess, that might have served as an aumrie. The height of the recess below the lintel is 3 feet 10 inches.

At a distance of 4 feet 7 inches from the entrance to G is a pear-shaped recess H, measuring 5 feet 9 inches long by 3 feet 7 inches wide, which was not opened up by Dr Munro. The thickness of the wall at the back of it is at least 4 feet 8 inches.

On the left of the passage E there is a semicircular recess, with a chord of 3 feet 3 inches and a depth of 2 feet 9 inches. An upright slab, 2 feet 2 inches high and 7 inches wide, stands on one side of the entrance.

Opposite the passage there is a small recess, measuring 2 feet 3 inches across and 1 foot 3 inches deep. About 9 inches to the right is another recess, 1 foot 8 inches across and 2 feet 9 inches deep, but this can only

be measured by means of a stick, as it is choked up with stones. The wall behind it reaches back for 11 feet.

The inside face of the walls, especially in G-H, is well built of good-sized stones, but is packed behind with loose stones. The wall between A-I is loosely built, is only about three stones thick, and was considerably damaged by one of the workmen. The walls of C, except at



Fig. 3. Chamber with Lintel Stone in the Roer Structure.

the south-east end, and of the adjoining passage, are only a few inches above the ground, and apparently only one or two stones thick.

It was impossible to clear out thoroughly the interior space F, on account of several very large stones which could not be removed. But there seemed to be no paving at the bottom, and digging a few inches down brought up peaty water.

No traces whatever were found of human occupation or of interment.

It seemed to me that enough stones had not been removed from the central space F, with its span of 8 feet 7 inches, to have constructed a beehive roof, and so I am inclined to suppose it was or might have been hypæthral. The recesses were certainly roofed, but not the roughly-circular enclosure F. If this is so, a structure of this character is an early one in the series that gradually led up to the broch, with its hypæthral central enclosure.

III. *A Third Group of Stone Huts.*

On the return journey we deviated a little from the direct path so as to inspect another group of small huts, which in some respects resembled those at the "Giant's Garden." One of these, which before excavation had the appearance of a small cairn of stones, had been already cleared out by Mr Haldane, but, like all the others of its kind hitherto explored in this barren district, it yielded no relics. A few yards from the explored hut there was a circumscribed area containing transported stones, which, on careful inspection, were found to be the ruins of several huts connected together by drain-like passages, so small that if they were intended to give access to human beings, it would tax the ingenuity of most men of the present day to wriggle through. The group occupied a slight elevation, and appeared to have been built partly above and partly below ground.

From the above facts it will be seen that in this part of the Mainland of Shetland, within the narrow limits of a few square miles, there were at least three different groups of stone huts constructed more or less underground, and probably roofed on the beehive method—an architectural system formerly common in Britain and Ireland. It is probable that, owing to the absence of forests, this system lingered on in these northern regions long after it was superseded elsewhere in Scotland by the use of timbers in the construction of dwelling-houses.

That the principles adopted in the construction of these primitive dwellings are capable of producing more imposing results we have ample

evidence in the brochs, the remains of which are so abundantly found in Shetland, which may be regarded as the highest outcome of their most skilful application to dry-stone buildings. A beehive chamber on a large scale can only be constructed under ground, or within a massive artificial structure of stone or earth, because the pressure of the surrounding materials is essential to prevent the stones from falling inwards. Each overlap of the roofing stones must be counterpoised by at least a corresponding weight or pressure, the perpendicular direction of which must be outside the floor of the chamber. Hence the beehive chamber in the wall of a broch, if correctly built, never falls in until the surrounding support crumbles away. The discovery of underground dwellings associated with protective enclosures above ground seems to me to be of some archaeological importance, inasmuch as it suggests that this special combination of two protective methods was formerly widely spread within the British Isles. That the fact has not hitherto been recognised may be explained by the readiness with which the above-ground structures could be removed, in the interests of agriculture or otherwise, when the system began to be superseded by crannogs, moated castles, and other more convenient habitations. In these circumstances the very sites of the underground dwellings, such as are now and again found in cultivated lands, having lost their superficial landmarks, would in the course of a few generations be entirely lost sight of. In Ireland, where souterraines are by no means uncommon, they are often found inside stone forts, raths, and other analogous enclosures. Although the present data are insufficient to formulate any generalisation on the subject, it is advisable that the above facts should be recorded, so as to be accessible to archaeologists interested in this obscure class of antiquarian remains.

VIII.

NOTICE OF SOME ANCIENT BURIALS IN ORKNEY.

By M. M. CHARLESON, F.S.A. Scot.

Grave mounds are very numerous in the Orkney islands; in fact they may be regarded as a prominent feature of the landscape, but I do not know that an exhaustive examination of them would prove as interesting as one might imagine. I have come to this conclusion from the fact that having, a few years ago, opened a number of barrows in the parish of Birsay, they were found to contain only deposits of incinerated bones, with cairns over them, or in small cists. Not one of those examined revealed an unburnt burial. The only feature of more than passing interest was the presence in one of these cairns of a rude stone implement, examples of which have been frequently found in the islands, generally on the surface of the ground. This implement runs from 10 or more inches in length, 3 to 4 inches in breadth, and 1 to 2 inches in thickness, the ends being rounded. Hitherto, the period to which this implement may belong has been matter for conjecture, but the discovery to which I have alluded would seem to show that it was either contemporaneous with, or anterior to, the time when burial by cremation was in vogue; in other words, the implement found in the Birsay mound may have been used by the people who erected the barrow, or it was picked up as an ordinary stone and thrown in along with the débris over the deposit of burnt bones. Here and there, however, throughout the group, burial mounds of considerable size are met with, and these are generally found to be more productive than the smaller variety.

About a year ago I investigated a burial in Harray which consisted of a large cist, the axis of which ran S.E. and N.W., and which measured 33 inches in length, 22 inches in width, and 28½ inches in depth. When opened, some time before I had an opportunity of examining it, the cist was found to contain a human skeleton in

good preservation, but careless handling and subsequent exposure reduced the remains to the very dilapidated state in which I found them. One-half of the skull, however, was intact, and this was submitted to Professor Alexander Macalister, Cambridge, who gave it as his opinion that the cranium was that of a male of advanced age, but its fragmentary state precluded his giving measurements. The index of the skull vault, however, was considered to be about 80, warranting the conclusion that the cranium was referable to the second immigration.

In this case the only industrial relic accompanying the remains was a whorl, probably of bone, which lay at the feet of the skeleton.

This is the first time, so far as I know, that a whorl has been found in Orkney in association with a burial; indeed, at the present moment, I should say, the first instance in Scotland in which such a discovery has been made. It has, however, been found with a burial at Weaverthorpe¹ in England, where a barrow, examined by Canon Greenwell, was found to contain a portion of one made out of clay.

An equally interesting discovery in the matter of grave goods was investigated by me in the course of last summer. A large mound in a neighbouring island was opened by a farmer who wished to settle the question whether or not the mound, which he knew to be artificial, contained anything valuable. Unfortunately, I did not hear of the excavation while it was being carried out, but I afterwards obtained a general description of the burial, and a view of the grave goods deposited with it, which are of a highly interesting character. The burial was after cremation, and the deposit of burnt bones was found about the centre of the mound, along with two fine bowl-shaped brooches of Viking type (fig. 1), an amber whorl, a bone (?) armlet, and a portion of a bronze pin. When found, the brooches were 9 inches apart, and the other objects were in close proximity to them. In size and ornamentation the brooches are practically identical, and there can be no doubt that they belonged to one individual, whose body was consumed

¹ *British Barrows*, pp. 116, 196.

on the funeral pyre. Each brooch, which is convex externally and concave internally, measures 4 inches in length, $2\frac{1}{2}$ inches in breadth, and $1\frac{1}{4}$ inches in height in the centre. The body of the brooch is double, consisting of an outer and finely decorated shell of brass open-work placed over an inner shell of brass, which is plain, and no doubt originally highly polished on the upper surface, so that the polished surface would appear through the open-work above it. The upper shell is divided into four diamond-shaped spaces, bordered by unpierced



Fig. 1. Bronze Bowl-shaped Brooch of Viking type.

bands, which have a slight lineal ornamentation. The angles of each diamond-shaped space have knobs, pierced in four places. Each space is pierced throughout, the ornamentation consisting of combinations of straight lines. The border of the inner shell, again, is spaced and ornamented with alternating crosses and combinations of straight lines. Only one of the brooches had the pin, which is of iron, intact, and seems to have been fastened in much the same way as the modern brooch, a brass catch projecting from the concavity of the shell to receive the point of the pin. Adhering to the pin, one could distinctly see a fragment of cloth, which on examination I took to be

linen, the texture being extremely fine. On the whole, the brooches when in use must have gone far to enhance the appearance of their owner, who, there can be no doubt, was a woman. In the words of Dr Anderson,¹ "As the sword is the most characteristic object among the grave goods of the man, the brooch is also the most characteristic object among the grave goods of the woman. The brooch which is constantly found in these interments in Norway is a most peculiar ornament. It is always of brass, massive, oval and bowl-shaped in form, and is distinguished from all other brooches that are known, not only of this, but of every other area and every other time, by the fact that it is an article of personal adornment which (though as capable of being used singly as any other form of fibula might be) is almost never found singly, but constantly occurs in pairs, the one being usually an almost exact duplicate of the other. This singular type of brooch is the special ornament of the female dress which prevailed in Norway during the last three centuries of their heathen period. It differs entirely from the types that preceded it and succeeded it: and it differs as completely from the types of the Later Iron Age in all other European countries." The amber whorl (fig. 2) is very pretty, and measures 1 inch in diameter, being fully $\frac{1}{2}$ inch thick. The bone (?) armlet (fig 3) which accompanied the burial is $2\frac{1}{2}$ inches in inner diameter and $\frac{1}{2}$ inch thick. It is well made, and when polished would make a very presentable ornament.

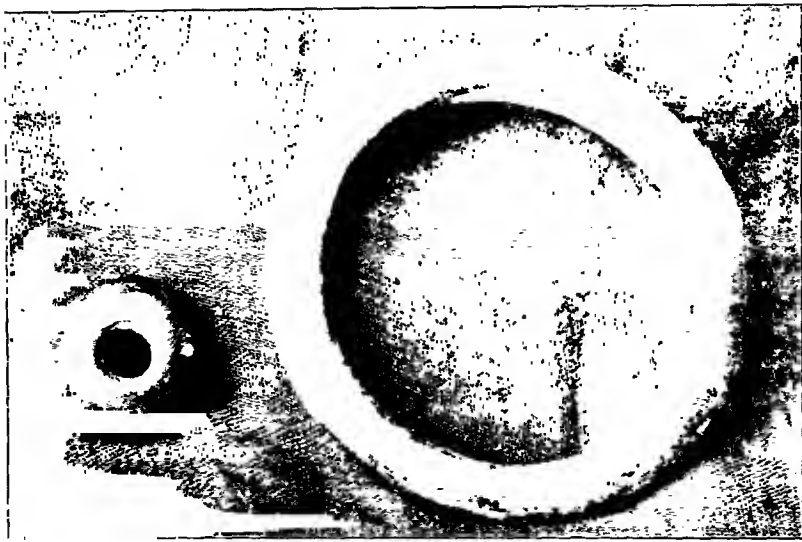
Ancient inhabited sites have not unfrequently given us human crania, but they have not necessarily any connection with the sites which may have been, and in many cases were, used as places of interment, the mounds covering the ruins being as serviceable for sepulture as any which could have been raised for the purpose.

In this connection I examined in 1898 an ancient inhabited site in the West Mainland,² and near which a human cranium in good preservation was found. There was nothing, however, in the circum-

¹ *Scotland in Pagan Times*.—*The Iron Age*, p. 34.

² *Proc. Soc. Ant. Scot.*, vol. xxxii. p. 322.

stances attending the discovery of the skull which would necessarily associate it with the building brought to light, but that it was of considerable antiquity I have no doubt. The cranium was subsequently submitted to Mr James Simpson, New University, Edinburgh, who gave it as his opinion that the specimen resembled the typical Scandinavian form.



Figs. 2 and 3. Whorl of Amber and Armlet of Bone (').

Sometime after the discovery of the skull another cranium (fig. 4) in capital preservation was found at the same site, and submitted to me for examination. I forwarded the skull to Professor Macalister, who favoured me with the following report thereon:—"A strongly-built male skull, long-headed ($\text{index} = \frac{\text{breadth} \times 100}{\text{length}} = 70.19$). In this it agrees with the older Orcadian skulls described by Garson,¹ and differs from the later

¹ *Journ. Anthropol. Inst.*, 1883, p. 54.

ones, which are broader. The circumference is 550, a measure increased by the thickness of the bone and prominence of the muscular crests, but fairly agreeing with Garson's measures. In capacity it is decidedly small, being 1390 c.cm., while the smallest of Garson's males is 1440. It is thus a mesocephalic skull. In height it exceeds its breadth, so the height index $\left(\frac{h. \times 100}{length}\right)$ is 73.7. In this respect it differs from Garson's



Fig. 4. Skull from West Mainland, Orkney.

skulls, but agrees with some long-barrow skulls from other parts of the kingdom. The brows are unusually projecting, which makes the forehead look lower than it really is. This is due to an enormous frontal sinus (the air-space over the nose); the orbits are rugged-bordered, low-browed, the transverse length exceeding the width $\left(\frac{w. \times 100}{l.} = 80.49\right)$. In this it also agrees with Garson's dolichocephalic older skulls. The

nose is shorter and wider than usual, its index $\left(\frac{w. \times 100}{h.}\right)$ being 57.14.

All the other skulls from Orkney or Shetland hitherto described are a little higher and a little narrower, and so have a lower nasal index. I have, however, got some North Hebridean skulls which resemble it in this respect. The face is uncommonly wide and flat. This somewhat Mongoloid appearance of some of the long skulls from Orkney was noted by Garson.¹ Here, as in his specimens, the two zygomatic arches stand out from the sides of the skull, so that when the head is held out at arm's-length a clear space appears between these arches and the side of the skull. This great interzygomatic width, together with the shortness of the face, gives a low superior facial index, but this is always a variable character. The palatine arch is wide and the teeth moderately large, but when compared with the size of the skull they are not at all disproportional. The length of the five hinder teeth, when compared with the length of the basinasal line (Flower's dental index), gives an index of 37.5, which is well within the microdental class. The palatine index $\left(\frac{\text{palatine width} \times 100}{\text{palatine length}}\right)$ is 115, comparable with that in Garson's specimens. Altogether it is a typical specimen of a strong male skull of the older type.

In the summer of 1902 my attention was called to the discovery of an ancient inhabited site in the parish of Stenness. After investigation I found that the building brought to light, being in a very dilapidated state, did not present any features of special interest, but I ascertained that immediately above it, about two feet from the surface of the ground, an unburnt burial had been brought to light. Unfortunately, however, the cranium and long bones had not been so carefully handled as their fragile state demanded, and consequently the skull and other parts of the skeleton received injuries which render a full description impossible. I forwarded the cranium and long bones, however, to Professor Macalister, who subsequently sent me the following report:—

¹ *Ibid.*, p. 73.

"The specimen is a very broken thin calvaria, probably of a female, with an index of about 76. Skulls of this index are generally supposed to belong to the second race. The fragments of the long bones are too imperfect to help us accurately to deduce the stature. As near as can be estimated, the femur, which is most complete, probably belonged to a person of 5 feet 2 inches. It looks as if it belonged to the skull submitted, but it is so much weather-worn that it is impossible to be definite." Along with the skeleton was found a large bronze pin, which must originally have measured at least $6\frac{1}{2}$ inches in length, but which is now only $5\frac{1}{4}$ inches, the point having been broken off by the finder, who, I understand, wished to ascertain the metal of which the ornament was constructed, hoping, no doubt, that it would be of more valuable material than bronze. The ring through the top of the pin also was broken when I got the pin, but it was whole when found. The head of the pin is flat, and cut into facets. For about three-quarters of its length the pin is round, but towards the point it has been flattened out.

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